Drug & Cosmetic INDUSTRY

Pharmacy Library
PURDUE UNIVERSITY
SEP 29 1942
LIBRARY

September 1942

WHAT'S IN A CIGARETTE ?

Besides Tobacco

Who would imagine that SNOW TOP Precipitated Chalk was used in the manufacture of cigarettes? But it is, as a filler in cigarette paper. Here again American enterprise has taken over a field largely dominated in the past by European skill. Formerly the importation of cigarette paper had gone unchallenged, as France sent increasing quantities to meet our ever-expanding demands. However, now cigarette paper consumed in the United States is an entirely American industry, even to the American precipitated chalk used as a filler. Cigarette paper in which SNOW TOP Precipitated Chalk is used as a filler meets every requirement for purity, porosity and rate of burning.

The wide range of adaptability of the various grades of SNOW TOP should be of interest to every manufacturer of dentifrices, cosmetics and antacid tablets. For when a particular formula or use is under consideration, one of the five standard grades of SNOW TOP is first selected that best suits it. Then it is only a matter of fine adjustment to place the specifications within the narrowest limits of your special formula.

SNOW TOP PRECIPITATED CHALK

SNOW TOP

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP & PAPER COMPANY

230 PARK AVENUE, NEW YORK CITY
35 E. WACKER DRIVE, CHICAGO, ILLINOIS
748 PUBLIC LEDGER BLDG., PHILADELPHIA, PA.
844 LEADER BLDG., CLEVELAND, OHIO.

It will open . . . *of course!*

Because it has been folded properly. Because it has been made with care. Because it has been inspected with even greater care.

And because it has been stored in a special air conditioned room—with exact temperature and humidity control—to protect the silk fabric against mildew or other climatic damage.

Ordinary air conditioning . . . the kind of air conditioning you've known in the past . . . wouldn't do for a job like this. *More precise* . . . and *more flexible* equipment . . . the air conditioning of the future . . . had to be developed.

General Electric has been specializing in meeting the difficult air conditioning problems created by America's war effort. Air conditioning to preserve materials . . . to improve the operation of machinery . . . to make it easier for men to work better!

When final Victory is won, many valuable lessons learned in fighting the Battle of Production will be turned to the uses of peace.

More people will be able to enjoy air conditioning in homes, offices and other places . . . because it will be less expensive, more compact. And it will be vastly improved air conditioning . . . with accurate control of *humidity* as well as temperature. *Required climates* will be reproduced at will.

When the time comes to supply the air conditioning needs of the post-war world, General Electric will be ready. General Electric Co., Air Conditioning and Commercial Refrigeration Department, Bloomfield, N. J.

Air Conditioning by

GENERAL ELECTRIC

Drug & Cosmetic INDUSTRY

SEPTEMBER 1942

CONTENTS

KEEPING POSTED	261
DRUG PLANT CULTIVATION	264
ADVERTISING AND TAXES	273
UREA	275
SKIN PROTECTIVE CREAMS	279
AUSTRALIAN EUCALYPTUS OILS	281
MERCHANDISING NEWS AND PACKAGING NOTES	287
PACKAGES OF THE MONTH	293, 295
NEWS	296
F. T. C. ACTIVITIES	307
INDUSTRY'S BOOKS	311
PRODUCTION FORUM	313
COMPOUNDER'S CORNER	325
PERFUMERS' SHELF	328
ADVANCING THERAPY	331
READERS' QUESTIONS	339
PURCHASING DEPARTMENT	343

The Drug and Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer; Thomas R. Farrell, Vice-president and Secretary. Publication Address, 28 Renne Ave., Pittsfield, Mass., U. S. A. Editorial and General Office, 101 West 31st St., New York, N. Y., U. S. A. Subscription price—$2.00 a year, in advance, Foreign Countries, $3.00 Single copies, 25¢; Back issues 50¢. Entered as Second Class Matter, January 1, 1928, at the Post Office at Pittsfield, Mass., under the Act of March 3, 1879

Contents Copyrighted 1942 by Drug Markets, Inc.

Printed by Sun Printing Co., Pittsfield, Mass., U. S. A.

THOMAS R. FARRELL, Editor
ELMER SHEETS, Managing Editor
FRANCIS CHILSON, Production Editor
JOSEPH KALISH, Technical Editor
FRAZER V. SINCLAIR, Business Manager
C. R. KEELEY, Advertising Representative
P. W. ALEXANDER, Advertising Representative
HARRY G. KELBLY, Circulation Manager
HILDA C. McCOLLOM, Art Director
ERNIE ADAMSON, Legal

KEEPING POSTED

Essential Oil Ceilings

On August 21, the OPA allowed two midwestern dealers in peppermint and spearmint oils to adjust their maximum prices in line with those of their competitors and to enable them to carry out their contracts with the farmers. The OPA also announced that the prices of peppermint and spearmint oils are being closely scrutinized, and, if desirable, a separate maximum price regulation covering these products may be issued in the next few months. Sales of these oils, other than sales by growers of the plants from which the oils are distilled, are covered by the General Maximum Price Regulation.

Under the orders issued, one dealer is allowed to sell natural oil of spearmint U. S. P. at $3.50 per pound, special redistilled oil of peppermint at $5.75 per pound, redistilled oil of peppermint U. S. P. at $5.85 per pound. Prior to this order, the dealer was required to sell these grades at $2.50, $4.00, and $3.00, although its cost of acquisition of natural oils was $3.00 for spearmint and $5.00 for peppermint. The other dealer is allowed to sell natural oil of peppermint at $5.50 per pound, and natural oil of spearmint at $3.50 per pound, compared with ceiling prices of $4.80 for peppermint, and $2.90 for spearmint.

On August 14, the OPA amended the General Maximum Price Regulation to exempt from its provisions sales or deliveries of essential or volatile oils by the growers in any of the forty-eight states and the district of Columbia of the plants from which these oils are distilled. This means that farmers who grow the plants and distill their own oils are able to change their prices without reference to the provisions of GMPR.

Hoarding Cosmetics

Chief Willard of the Toiletries and Cosmetics Branch of WPB has issued a statement directed against distributors of cosmetics who have been reported to be encouraging their customers to hoard supplies. Mr. Willard wrote as follows to one distributor:

"It goes without saying that any such action on your part is not only decidedly unpatriotic, but is contrary to the best interests of the war effort. * * * Certainly under any restrictive order we should all share and share alike, and we hope that in the future you will not again take it upon yourself to suggest that any group protect itself to the disadvantage of other groups."

Personally, we fail to see why any dealers or others should attempt to hoard cosmetics. The restriction order is a comparatively mild one and is based upon the figures of production or sales for the calendar 1941, which was the biggest year that the cosmetic manufacturers ever had. We think that anyone who attempts to hoard cosmetics will eventually find himself holding the bag.

Work for the War

Very few manufacturers of cosmetics are really interested in converting to war work. However, if they can produce goods which the government can use to advantage in the war effort, they had best start to produce these goods even though it might mean curtailing the production of their regular lines. The effect which voluntary curtailment of their own lines might have on the public acceptance of their brands, and the effect which such curtailment might have upon disruption of their sales forces and other merchandising efforts are nearly as serious as what might occur if the government is not able quickly to get all the things it needs.

The cosmetic restriction order was mild indeed. However, this might not be the final order to be issued. Amendments to this order will occur as time passes, and these amendments might come quickly and might be rather sharp. The government is sure to act in all such cases if additional facilities or additional curtailment are necessary to produce the sinews of war. Furthermore, there is no telling how high taxes are going to be.

And if taxes and food prices go much higher, the amount of cosmetics bought during a year is going to be sharply lower. Under these circumstances manufacturers will have excess plant capacity which could very easily and very profitably be used in producing some of the goods which the government needs. This war is going to be a hard and a long struggle. It will not be won easily or soon as some wishful thinkers state. Therefore, all businesses and all individuals in this country are going to be contributing more and more to the war effort as time moves along. Therefore, it would be well for everyone to move as rapidly as possible into such activities connected with the war effort as he is qualified to perform.

No Learner Wages

An application of the Toilet Goods' Association to the Wage and Hour Division to permit the employment of learners in the Drug, Medicine, and Toilet Preparations Industry at wages lower than the minimum wage, was denied on August 25. The Wage and Hour Division, after a hearing, decided that the industry has shown "no need for authority to employ learners at subminimum rates in order to prevent curtailment of opportunities for employment in the industry."

Cosmetic Questionnaires

Price Administrator Leon Henderson extended from August 15 to September 15 the date by which cosmetic manufacturers must file their questionnaires with the OPA. This was done because of the fact that difficulties were experienced in filling out the questionnaires as the result of many employees being on vacation.

Limitation Clarified

The WPB has issued an interpretation of the Cosmetic Limitation order which, for the most part verifies the impression generally held by manufacturers of how they should operate under this order. The interpretation explains that all brands of any item made by one manufacturer can be grouped together when considering how much of any one item can be made under the order. Therefore, the bulk quantity of several brands of cleansing cream, for example, can be added together when considering how much cleansing cream was made in 1941 and how much can be made in the period included in the order. Also tooth cleansers, whether paste, powder, or liquid, can be added together, and the quantity allowed to be made for the period under the order is determined by comparison with that figure. Therefore, one brand of a cleansing cream, for example, or one type of a tooth cleanser can run ahead of the others during this year so long as the total of all the brands or types does not exceed the amount allowed under the order. The same thing is true of the number of packages that can be put up. The number of packages of all brands or types are added together, and this figure is used for comparison.

The question of private brand manufacture is covered in the interpretation. It is stated that in determining the total quantity of a product that can be produced during the period covered by the order, a person should add together the quantity of the product that he produced under his name or brand and the amount that he caused to be produced, and then by applying the proper percentage to this figure he will find out the total amount that he is allowed to produce. This quantity may be obtained either by the person producing it himself, or through causing it to be produced, regardless of how it was produced in 1941.

In determining the quantity that a person may sell of a particular product, the person is required to take the total quantity that he sold during 1941 under his name or brand, and then apply the proper percentage to this figure. The same procedure is used in determining the allowable number of packages. Sample or tester sizes which are not sold are not to be considered as consumer sizes or professional or service sizes under the provisions of schedule 2.

War Bond Advertising

Drug and cosmetic manufacturers are organizing to help the government sell war bonds, The plan is for some three hundred manufacturers in this industry to donate to the sale of war bonds five per cent. of their advertising space in magazines, newspapers, car cards, and posters, as well as five per cent. of their radio time. This industry will be the first to organize and coordinate this effort so that it can be properly handled with the greatest effectiveness resulting from the space and time contributed.

Space in magazines donated by manufacturers is divided up mostly in page and two-column layouts, though smaller space will be used in some instances. These insertions will be spaced so that at no time will national magazines, forty or more in number, be without at least several war bond advertisements. At least six radio shows each week will devote the entire period of at least fifteen minutes to the sale of war bonds. The committee in charge of the plan expects to have about 340 commercial network programs over a year for this purpose alone. Newspaper schedules will also be adjusted so that there will be no lull at any time in the twelve-month campaign.

Those national manufacturers with no available figures on promotion expense will be asked to donate cash, or space equal to five per cent. of what they anticipate using over the next twelve months. The overhead for the drive has been underwritten.

The campaign will be coordinated by a special industry committee known as the Drug, Cosmetic and Allied

Trades Committee, 630 Fifth Avenue, New York. This committee will work with the Advertising Council, which will secure the approval of the Treasury Department on all copy. Each agency will place the advertising of its clients. The copy angle will be presented by a committee made up of representatives from Young & Rubicam, Ruthrauff & Ryan, Pedlar & Ryan, and Benton & Bowles. This committee will in turn inform other agency men of the aims and the methods to be used by the clients who cooperate with the drive.

Lee H. Bristol, vice-president of Bristol-Myers Company, is chairman of the policy committee, and Robert H. Brown, of the same company, is vice-chairman.

Ration K

Some manufacturers in this industry who have been trying to get war work have obtained orders for Ration K. This is the package of three meals,—breakfast, dinner, and supper which was orginally planned to be carried by paratroops, and possibly rangers, but which is now to be carried by all our soldiers for use in emergencies. The reason why manufacturers in this industry can handle this type of products is that the items which go into the package can all be bought, and therefore the operation to be performed is simply an assembling and packaging operation. Filling an order for Ration K runs into a very heavy initial outlay, however, since the items must all be bought by the bidder before he is in a position to fill the order. Therefore, financial strength or ability to obtain considerable credit without too much trouble is essential.

WPB Activities

THE War Production Board is now entering a different phase of its activities. Beginning this year with a personnel of 6,500 people, the WPB tried at first to use existing government procurement agencies to meet the demands of the war effort. Later, the aid of industry was enlisted by the creation of advisory committees. WPB had 12,000 employees by April, and now has 18,000, with 5,000 to 7,000 more anticipated to be employed in the field to carry out the decentralization program now under way. WPB is set up for an army of 8,000,000 men, 5,000,000 of whom will be in service by the end of the year. From January to July of this year, all efforts of WPB were directed to conversion of industry to the war effort. This conversion now being accomplished, the efforts of WPB will be directed toward control of the flow of materials, which is to be brought about by realignment of WPB functions.

In accordance with strategy decisions, policy determination is now arrived at through WPB, after consultation with the Combined Production and Resources Board, representing the combined production and resources of Great Britain and the United States.

Delegated operations and collaboration are to be achieved through WPB General Staff, consisting of such agencies as the Board of Economic Warfare, Office of Lend-Lease, Procurement Division of the Treasury, R.F.C., War Manpower Commission, Army Air Force Materiel Command, War Department Service of Supply, Navy Director of Materiel and Procurement, the Maritime Commission, War Shipping Administration, Office of Defense Transportation, Department of Agriculture, and Office of Petroleum Coordinator.

When policy is determined, program determination and control is provided for by decisions of a vice-president of WPB. This vice-president will be in charge of program determination only after a Requirements Committee has reported to him and to the Combined Production and Resources Board. A deputy chairman of WPB will be in charge of program progress, and it will be his duty to check on production and performance.

To meet program commitments, a Director General of Operations will work through a number of divisions such as Inventory Control, Priorities Administration, and Industry Advisory Committees. The Director General for Operations will be charged with the responsibility of gearing industry to the war program and expediting the flow of critical materials, utilizing for the purpose industry and commodity divisions.

Decentralization of regional problems will be handled through the Director of Regional Offices.

Industry Units Changed

Units of WPB controlling products of this industry have been transferred and are now sections of the Chemicals Branch of WPB. Therefore the Drug and Pharmaceutical Section of the Health Supplies Branch is now a section of the Chemical Branch of WPB, and the Toiletries and Cosmetic Branch of WPB is now the Toiletries and Cosmetic Section of the Chemical Branch of WPB.

These moves are apparently for the purpose of making it easier for WPB to control the flow of chemicals, which everyone knows are vital materials in the war effort. As mentioned above, the conversion of industry by WPB to the war effort has now been accomplished, and WPB is now charged mainly with the flow of the materials that can be produced with the facilities now developed.

What difference this will make to manufacturers in this industry is hard to forecast. It is not stated that there will be any important changes in personnel, and transfers merely resulting in different men receiving the reports of these units and directing the allocation of critical supplies. Appeals under the cosmetic restriction order were recently handled by the Toiletries and Cosmetic Branch, but in the future they are to be handled by the recently formed Appeals Branch of WPB.

Dwight Bond has resigned as administrator of the cosmetic restriction order and has been replaced by Robert Blair who was formerly connected with Germaine Monteil, and prior to that with Bellin's Wonderstoen.

DRUG PLANT CULTIVATION

By E. N. GATHERCOAL*

CULTIVATED drug and essential oil plants constitute highly specialized crops. Such crops usually require much hand labor, hence the production of such crops has been more extensively carried on in other parts of the world than in the United States. In recent years, however, especially with the introduction of specialized machinery, the picture has been changed.

Drug Plant Cultivation in the World

To give a general survey of the cultivation of drug plants in the world as a comparison with the United States, the following tabulation is presented.

The drugs are classified into four groups according to their usage and therapeutic importance; namely: Group A presents official drugs of high therapeutic importance and relatively large medicinal usage; Group B presents official drugs of somewhat less therapeutic importance and usually used medicinally in smaller quantities; Group C presents official and non-official drugs (about 50 per cent. of each) that are used medicinally in relatively small quantities (usually not more than 100,000 pounds annually in the United States); Group D includes a considerable number of non-therapeutic items that are used as pharmaceutic necessities; that is, they serve in medicinal preparations as sweetening, coloring or flavoring agents or as vehicles in ointments, liniments, etc. for carrying the medicinal items; a few are used in sick-room or surgical supplies. They are mostly official items.

Drugs that have other economic uses are so designated by an asterisk.

The geographic locations where these drug plants are *principally* cultivated are also given. In this tabulation, "Eu." includes all of the continent of Europe except the countries bordering on the Mediterranean Sea; "Med. B." includes Asia Minor and the European and African countries bordering on the Mediterranean Sea; "Asia" includes Central and Eastern Asia north of India and Burma; "E. I." includes India, Burma, Malay Peninsula and the East India Islands; "Af." includes all of the continent of Africa south of the Mediterranean Basin; "S. A." includes the continent of South America; "W. I." includes Mexico, Central America and the West India Islands; "U. S." includes the United States and Canada with Alaska and the Hawaiian Islands.

*Emeritus Professor of Pharmacognosy, University of Illinois College of Pharmacy, Chicago.

Drugs Obtained in Whole or in Part from Cultivated Plants

Drug Name	*Official Source*	*Group*	*Geographical Location of the Cultivated Plants*
Acacia*	USP	D	Af.
Aconite	NF	B	Eu., U.S.
Aconitine	..	C	
Adonis	NF	C	Eu.
Alkanet	..	D	Med.B.
Almond, Bitter	..	C	Med.B., S.A., U.S.
Almond Oil, Expressed*	USP	D	
Oil of Bitter Almond	USP	C	
Aloe Leaf	..	C	U.S.
Aloes	USP	B	Med.B., Af., W.I.
Aloin	USP	A	
Althea	USP	C	Eu.
Angelica*	..	C	Eu.
Anise*	NF	C	Eu., Med.B., S.A.
Oil of Anise*	USP	D	
Anethol*	NF	D	
Areca (Vet.)	NF	B	E.I.
Arecoline Salt	NF	B	
Belladonna Leaf / Belladonna Root	USP	A	Eu., U.S.
Atropine and Salt	USP	A	
Benzoin*	USP	B	E.I.
Blackberry Bark	..	C	Eu., U.S.
Blessed Thistle	..	C	U.S.
Burdock (first year root)	NF	C	U.S.
Calendula	NF	C	Med.B., U.S.
Camphor	USP	A	Asia
Cannabis	..	C	E.I.
Capsicum*	NF	B	Asia, Af., U.S.
Caraway*	USP	C	Eu., Med.B., U.S.
Oil of Caraway*	NF	C	

Drug Name	*Official Source*	*Group*	*Geographical Location of the Cultivated Plants*
Cardamom Seed*	USP	D	E.I.
Oil of Cardamom*	NF	D	
Cascara Sagrada	USP	A	U.S.
Castor Oil*	USP	A	E.I., S.A., U.S.
Catnip	NF	C	U.S.
Celery Fruit*	NF	C	Eu., U.S.
Centaury	..	C	Eu.
Chamomile, German	NF	C	Eu.
Chamomile, Roman	..	C	Eu., S.A.
Chenopodium	..	C	U.S.
Oil of Chenopodium	USP	B	
Cherry Juice*	NF	D	U.S.
Chionanthus	NF	C	U.S.
Cinchona	NF	B	E.I., S.A.
Cinchonidine Salt	NF	B	
Cinchonine Salt	NF	A	
Quinidine Salt	USP	A	
Quinine and Salts	USP, NF	A	
Totaquina	USP	C	
Cinnamon*	USP	D	Asia, E.I.
Oil of Cinnamon*	USP	D	
Clove*	USP	D	E.I.
Oil of Clove*	USP	B	
Eugenol*	USP	B	
Coca*	..	C	S.A.
Cocaine and Salt	USP	A	
Cocoa*	NF	D	Af., S.A., W.I.
Cocoa Butter*	USP	D	
Coconut Oil*	..	D	E.I., W.I., U.S.
Coffee*	..	C	Med.B., E.I., Af., S.A., W.I
Caffeine and Salt	USP	A	
Cola*	NF	B	E.I., Af., S.A.
Colchicum Corm	NF	B	Eu.
Colchicum Seed	USP	B	
Colchicine	USP	B	
Colocynth	NF	B	Med.B., E.I.
Convallaria	NF	B	Eu., U.S.
Coriander*	NF	D	Med.B., Eu., E.I., Af.
Oil of Coriander*	USP	D	
Corn Oil*	..	D	S.A., U.S.
Corn Silk	NF	C	U.S.
Cotton, Purified*	USP	D	U.S.
Cottonroot Bark	NF	B	U.S.
Cottonseed Oil*	USP	D	U.S.
Crocus*	NF	C	Med.B.
Croton Oil	NF	C	E.I.
Cubeb	NF	B	E.I.
Curcuma*	..	D	Asia, E.I.
Dextrose*	USP	A	S.A., U.S.
Diastase	..	C	U.S.
Digitalis	USP	A	Eu., U.S.
Digitalis, Powd.	USP	A	
Dulcamara	..	C	Eu., U.S.
Elaterium	..	C	Eu.
Ephedra	..	C	Asia, U.S.
Ephedrine and Salts	USP	A	
Ergot	USP	A	Eu., Med.B., U.S.
Ergonovine Salt	USP	A	
Ergotamine Salt	USP	A	
Fennel*	NF	C	Eu., Med.B.
Oil of Fennel	USP	C	
Galangal	..	D	E.I.
Garlic*	..	C	Med.B., U.S.
Gelsemium	NF	B	U.S.
Gentian	USP	B	Eu., Med.B.
Ginger*	USP	B	E.I., Af., W.I.
Ginseng	..	C	U.S.
Glucose*	USP	D	S.A., U.S.
Hellebore, Black	..	C	Eu.
Hops*	NF	C	Eu., U.S.
Lupulin*	NF	C	
Horehound	..	C	Eu., U.S.
Hydrastis	NF	B	U.S.
Hydrastine Salt	NF	C	
Hyoscyamus	USP	A	Eu., U.S.
Hyoscyamine Salt	.	C	
Ipecac	USP	A	E.I.
Emetine Salt	USP	A	
Jalap	NF	B	W.I.
Lactucarium	..	C	Eu.
Lemon Peel*	USP	D	Med.B., E.I., U.S.
Oil of Lemon*	USP	D	
Citric Acid*	USP	B	

Drug Name	Official Source	Group	Geographical Location of the Cultivated Plants
Licorice*	USP	B	Eu., Med.B.
Linseed*	USP	C	Eu., S.A., U.S.
Linseed Oil*	USP	B	
Lobelia	NF	B	U.S.
Malt*	..	C	Eu., U.S.
Manna	NF	C	Med.B.
Mastic	NF	D	Med.B.
Mustard, Black*	USP	C	Eu., E.I., U.S.
Nutmeg*	USP	D	E.I.
Oil of Nutmeg*	USP	D	
Oat*	NF	C	U.S.
Olive Oil*	USP	D	Med.B., U.S.
Opium	USP	A	Med.B., E.I.
Opium, Gran.	USP	A	
Opium, Powd.	USP	A	
Codeine and Salts	USP	A	
Morphine and Salts	USP, NF	A	
Papaverine Salt	NF	B	
Orange Peel, Bitter*	USP	D	Med.B., S.A., U.S.
Oil of Bitter Orange	NF	D	
Oil of Orange Flowers*	NF	D	
Orange Peel, Sweet*	USP	D	Med.B., Asia, U.S.
Oil of Orange*	USP	D	
Orris*	NF	D	Med.B.
Oil of Bergamot*	NF	D	Med.B.
Oil of Eucalyptus*	USP	B	Australia, U.S.
Eucalyptol	USP	B	
Oil of Lavender*	USP	D	Eu., U.S.
Oil of Pimenta*	NF	D	W.I.
Oil of Rose*	USP	D	Med.B.
Rose Water, Stronger*	USP	D	
Oil of Rosemary	USP	D	Med.B.
Oil of Star Anise*	USP	B	Asia
Pectin*	NF	B	U.S.
Pennyroyal	..	C	Eu., U.S.
Oil of Pennyroyal	..	C	
Peppermint	USP	B	Eu., U.S.
Oil of Peppermint*	USP	A	
Menthol	USP	A	
Persic Oil*	USP	B	Med.B., U.S.
Pomegranate*	..	C	Eu., U.S.
Pelletierine Salt	USP	B	
Poppy Heads	..	C	Eu., U.S.
Psyllium Seed, Black	NF	B	Eu., U.S.
Psyllium Seed, Blonde	NF	B	E.I.
Pulsatilla	NF	C	Eu., U.S.
Pumpkin Seed	..	C	U.S.
Raspberry Juice*	NF	D	U.S.
Red Clover Blossoms	NF	C	Eu., U.S.
Rhubarb	USP	A	Asia
Rice Polishings	USP	C	Asia, E.I., U.S., etc.
Red Rose Petals	NF	C	Eu.
Rubber*	..	D	E.I., S.A.
Sage*	NF	C	Med.B., S.A., U.S.
Salicin	NF	C	Eu.
Sandalwood, White*	NF	C	E.I.
Oil of Santal*	NF	B	
Santonin	NF	B	Eu., U.S.
Scopola	..	C	Eu.
Scopolamine Salt	USP	A	
Senna	USP	A	Med.B., E.I., S.A.
Sesame Oil*	NF	D	Asia, S.A., U.S.
Spearmint	USP	D	U.S.
Oil of Spearmint*	USP	D	
Spigelia	..	B	U.S.
Starch, Arrowroot*	..	D	W.I.
Starch, Corn*	USP	D	S.A., U.S.
Stramonium	USP	A	Eu., U.S.
Sugar, Beet*	USP	A	Eu., U.S.
Sugar, Cane*	USP	A	W.I., U.S., etc.
Tamarind*	..	C	E.I., W.I.
Tansy	..	C	Eu., U.S.
Oil of Tansy	..	C	
Thyme*	NF	B	Eu., U.S.
Oil of Thyme*	NF	C	
Thymol	USP	A	E.I., U.S.
Triticum	NF	B	Eu., U.S.
Valerian	NF	B	Eu., S.A., U.S.
Vanilla*	NF	D	E.I., W.I.
Veratrum Viride	NF	C	U.S.
Wormwood	..	C	Eu., Med.B., U.S.
Oil of Wormwood	..	C	
Yeast*	NF	B	U. S., etc.
Zedoary	..	C	E.I.
Insecticides			
Hellebore, White	.		Eu.
Larkspur Seed	NF		Eu., U.S.
Pyrethrum Flowers	..		Med.B., Asia, Af.,S.A.,U.S.
Stavesacre Seed	..		Med.B.

*Drugs that have other economic uses.

Summary

Remember that these drugs are from cultivated plants; the drugs produced in these areas from both wild and cultivated plants would present very different figures.

In thinly populated or backward areas, such as Africa, Central and Northern Asia, Australia and the Indies, all types of plant cultivation are less advanced than in the densely populated and more temperate areas such as Europe.

Usually we have meager information from the foreign areas as compared with our own country and Europe. Information of this type is slow to find its way into print and official circles have paid little attention to these relatively minor items. Also this type of information is frequently kept secret by those most interested.

The cultivation of drug and essential oil plants has been followed in the British Isles, France, Central Europe and the Mediterranean Basin for many centuries past, but is relatively new in the United States

and South America, mostly dating back less than fifty years. South America especially, has made large developments within ten years, and our information is probably too meager to fully present these South American developments.

We may have been inclined to credit our country with items hardly out of the experimental stage. Whatever our errors may be we hope they tend toward the conservative side.

Official Source: U. S. Pharmacopoeia, 97 drugs; National Formulary, 72 drugs; Unofficial, 43 drugs; total, 212 items. Note that nearly 80 per cent. of the drugs listed are official. Of the total U.S.P. drugs derived from botanical sources, 76 per cent. are from cultivated plants; of the National Formulary drugs, 48 per cent. are from cultivated plants.

Usage Groups: Group A = 50; Group B = 45; Group C = 72; Group D = 45; total = 212. Group A, the most important drugs, is relatively large because it contains many therapeutically valuable alkaloids and other active principles.

Geographical Locations of the Cultivated Plants: The drug plants are fewer in number than the drugs, for quite frequently two or more drugs are derived from the same plant; the total approximates 150. "Eu." =50; "Med.B."=32; "Asia"=11; "E.I."=34; "Af." =8; "S.A."=20; "W.I."=9; "U.S."=78.

Drug Plant Cultivation in the United States

The most extensive cultivation of a plant in the United States exclusively for the drug is probably that of *Hydrastis canadensis*. Other items, such as oil of peppermint, oil of lemon or black mustard seed, may far exceed in magnitude the production of goldenseal, but such items have other commercial uses of greater value than the use of the item as a drug.

Specialty crops, particularly in the United States, are usually "one-man" crops. The crop may be so small, the "one-man" may mean that a single person does all of the work of seeding or propagation, cultivation, collection, drying, etc. Usually, however, the expression "one-man" refers to a single organization or association producing the drug, though sometimes it means that one person or corporation controls the marketing and frequently the purification and standardization of the drug.

BELLADONNA PLANTS "HARDENING OFF" IN COLD FRAMES

A specialty crop, particularly one where the demand is limited, always involves peculiar economic risks. The producer does not have the many "helps" that accrue to the routine agriculturalist; he may not be able to obtain the necessary machinery inexpensively, especially for harvesting and drying his crop; he may not have the many guides as offered by the department of agriculture for the usual crops; he is quite likely to find that the marked concentration of the one crop in a limited area tends to an increase of plant diseases; he does not have a stable, cash market as is produced by boards of trade for the usual crops; and finally, if he does make a financial success, severe competition and substitution of inferior goods is likely to develop in the very limited field where the drug is used. Despite these handicaps, however, a number of drug crops in the United States have been fair successes economically, usually because the sale of the drug has been carefully controlled. As an illustration, blessed thistle, the dried herb of *Cnicus benedictus*, is produced exclusively on one farm under the control of one man to the extent of about 100,000 pounds annually, which supplies the entire American market. Sales are made under contract directly to the few consumers in the United States. Of course this producer says he is making no money, for every farmer, under every condition, makes the same statement. This Tennessee farm looks very prosperous.

Another example of what appeared to be a successful drug plant cultivation until very recent years is that of *Panax quinquefolium*, the dried root of which is ginseng. The fifty-five growers located in Escatada, Oregon, produced more than 90 per cent. of the annual salable crop and were closely associated in a central selling agency. Now, because of war conditions, their Chinese market is practically ruined.

YOUNG PLANTS OF BLESSED THISTLE

Very high-grade digitalis has been quite successfully marketed from cultivated plants in this country for a number of years past and in England for at least a half century.

Further mention should be made of hydrastis which has been extensively produced by cultivation in a limited locality in western Washington, so that during recent years one firm was marketing at least 60 per cent. of the entire demand in the United States and foreign countries. This firm did not produce all that it marketed but acquired additional quantities from a number of local producers. Unfortunately, disease has very seriously ravished these plantings and the crop is very short this year and may be for some years to come.

One of the most interesting drug plant cultivation developments is that of *Aloe vera* in Florida, south of Miami, where one planter, several years ago, had more than 100,000 plants under cultivation. The leaves were not being used for the production of the commercial drug, aloes, but were being sold in the fresh condition to individual customers for medicinal purposes. The retail price was 25 cents per leaf, and one plant might produce six or eight commercial leaves annually. The demand was almost greater than he could supply. The mucilage of aloe leaf is largely a pectin, and this substance is now known to have remarkable properties in connection with the healing of wounds, ulcers, etc.

A few other drug plants have been cultivated at various times in the United States for the commercial production of the drug exculsively. These are particularly *Atropa Belladonna*, *Hyoscyamus niger*, and *Datura Stramonium*, producing belladonna leaves and belladonna root, henbane herb and stramonium leaves and herb. Apparently, however, these three drug plants are war babies; they have not been produced with economic success except when prices are markedly increased by restriction of importation from Europe.

There are a considerable number of plants that have economic value beyond the drug they produce that are very extensively cultivated in the United States. Among these are the essential oil plants, such as those yielding oil of lemon, oil of orange, oil of peppermint, oil of spearmint, and many others.

Another group of plants that yield drugs as secondary products and which are extensively cultivated in the United States include garlic, red pepper, thyme, sweet almond, asparagus root, pumpkin seed, cotton root bark, cotton seed oil, malt from barley, hops and lupulin, linseed oil, red clover blossoms, pomegranate and certain corn products.

Requisites for Drug Plant Cultivation

While the items mentioned above may be considered as commercially successful, yet many other plants yielding drugs and other specialty products have been tried out in a more or less experimental way during many past years.

The failure to develop commercial success in connection with many of these experiments is due to the lack of one or more of certain requisites to success. Such requisites may be listed as follows: (1) modern scientific knowledge of botanical, genetical, chemical, bacteriological, horticultural and agricultural methods as applied to the propagation, cultivation and health of the plant, to soil management, and to the collection, drying and preservation of the drug; (2) reduction of labor costs through the use of mechanical means for transplanting, cultivation, collection, drying, and preservation; (3) commercial astuteness in regard to marketing.

Experimental Work

To bring about a commercially successful drug plant cultivation, three types of experiments may be necessary, namely:

1. Horticultural or agricultural experiments, including studies as to the most suitable climate, the proper type of soil, adequate soil fertility, the best planting season, proper seeding or other methods of propagation, cultivation, moisture requirements, etc.

2. Studies in plant breeding and the use of colchicine and certain vitamins to increase the percentage of active principle in the drug, to eliminate susceptibility to disease, to increase the yield of drug per plant, and to overcome climate and soil difficulties.

3. Development of improved methods, usually mechanical, for the collection, drying and preservation of the drug.

Experimental Work in Drug Gardens

Drug plant cultivation in connection with the home garden or larger botanical gardens, extends back through many centuries, at least to the time when the Arabs were the leading physicians of the world. Perhaps we do not realize how much work was done with certain drug plants along the lines of acclimatization, soil fertilization and other horticultural and agricultural experiments in these early plant gardens.

Drug plants have been cultivated for centuries in the beautiful gardens of England, and it was in one of these gardens that Dr. William Withering found foxglove which had local repute as a medicine. He studied its therapeutic properties and introduced the drug, digitalis, to the medical profession (1776-9). Digitalis drug has been produced from cultivated plants in England ever since that time. Many experiments in these early gardens demonstrated that rapid drying of the leaves of digitalis at moderate temperature immediately after picking led to a uniform grade of high class drug, which then should be preserved with a moisture content of not more than 5 per cent. Genetically, perhaps, no improvement has been made in the drug since the time of Withering, largely because no accurate means of evaluating the drug has been known.

It is of interest also to note that Gregor Johann Mendel (1822-84) discovered the basic principles of genetics in an Austrian monastery garden containing

HENBANE DRYING RACKS

drug plants. While he used peas and decorative flowering plants in his genetical studies, yet he also used delphiniums, the seeds of which form a valuable insecticide.

Botanical gardens originated quite early in the history of the United States. Usually these contained some drug plants, though apparently no scientific work leading to the improvement of these plants was undertaken in these early gardens. Perhaps the earliest gardens specifically for drug plants were established by Colleges of Pharmacy about the beginning of the present century.

The drug plant garden of the University of Minnesota, established some fifty years ago, has been used very extensively for class work in the college of pharmacy; not only did the students have material from the garden for class-room work, but these students actually planted and tended the garden, collecting and drying each drug at the proper time, and then studying the pharmacognosy and chemistry of these drugs. Also, much experimental work of every kind listed above has been carried out in connection with this garden.

For many years (1911-1925) Dr. E. L. Newcomb, Professor of Pharmacognosy, was the leading spirit in this garden. Since then Dr. E. B. Fischer has been in charge. During the entire history of the garden, 650 large excellent photographs have been prepared of the living plants and of the drugs from them, and these now constitute one of the most valuable of such collections in the world.

During World War I, when a shortage of imported digitalis developed, this garden raised large crops of the plant, produced the highest quality of drug and supplied the American army. More than 27 million doses of digitalis and its preparations were prepared and distributed by this college during this war. All of it was very high class drug accurately assayed and far superior to the U.S.P. standards which were based upon average imported drug. It was at this college of pharmacy that individual dosage of finely powdered digitalis in capsules was introduced to the medical profession, a dosage form which is now very common.

Other colleges of pharmacy instituted drug-plant gardens, following Minnesota, until today most of the 50 or more pharmacy schools in this country have some semblance at least of such a garden. A number of these schools have used their gardens for class work and research very advantageously. A large number of important contributions have come from such schools.

At the South Dakota State College (Brookings, S. D.), Professor L. D. Hiner and Dean E. R. Serles of the College of Pharmacy produced a very fine research on *Ephedra* species yielding medicinal ephedrine. The study involved not only horticultural methods (in connection with the college of agriculture), but extensive work in plant breeding. They not only grew the plants most successfully on the poorer soils of the "Bad Lands" and in the droughts of the "dust bowl" but demonstrated that the plants would be very valuable in holding in place the dry soils of the dust bowl. They not only greatly increased the content of alkaloid (from 0.3% to nearly 2.0%) by plant breeding, but, when it was considered desirable to use the plant for soil improvement, they were able to practically eliminate ephedrine from the plant so that it would not be poisonous to cattle. They showed that it was easily possible to produce a crop worth $300.00 per acre on lands now unproductive and submarginal; and this in the face of very low-priced Chinese imports under normal world conditions. They could even produce ephedrine at a lower cost than that of the synthetic item which was developed during the time of their research; however, the advantage in the cost of production of natural ephedrine as compared with synthetic ephedrine has not been sufficient to justify commercial investment in a "specialty" crop.

The College of Pharmacy of the University of Florida has maintained drug plant gardens at Gainesville and at other locations in the State for a number of years. These experimental plots have demonstrated the economically successful production of drug or volatile oil from a large number of the plants grown. Some of these have entered commercial production, especially since World War II has closed importation from Europe and most of the world. (See DRUG AND COSMETIC INDUSTRY, July, 1942.)

Western Reserve University (Cleveland, Ohio) was most fortunate in receiving as a gift a number of years ago, a large estate in the environs of the city, along with sufficient endowment to maintain extensive experimental plots and research in agriculture and horticulture as well as drug plant cultivation. Professor F. J. Bacon, pharmacognocist at the University, is now in residence on the estate and in general supervision. A large number of native and imported drug plants, some of them rare and choice specimens, are growing in these extensive gardens, and many experimental plots are in use. Digitalis as a drug has been highly developed here, and the University supplies most of the hospitals and clinics and many of the physicians of Cleveland

with very high standard drug. Genetical experiments are leading to great improvement in quality of a number of drug and economic plants, including the plant producing the insecticide, pyrethrum.

The drug plant garden at the University of Washington (Seattle) has long been established and in recent years has developed into one of the finest in the world. Dr. H. A. Langenhan, of S. B. Penick & Co., was instrumental in this development. In this garden, experimental projects on the cultivation of many important drug plants have been advanced. Among these are *Rhamnus Purshiana* (cascara sagrada), Japanese mint (menthol), *Lavendula spica* (oil of lavender), *Hydrastis canadensis* (golden seal), etc. The State of Washington is now a leader in drug plant cultivation and drug production.

Drug plant gardens were early developed at the University of Michigan (Ann Arbor) under Henry Kramer and at the University of Wisconsin (Madison) under Edward Kremers, two men famous in American pharmacy.

Dr. Kremers interested the U. S. Bureau of Plant Industry in the state project and the garden contributed a number of important experimental projects as well as quantities of drug plant seed.

Michigan has been a leading state in drug collection from native wild plants and in drug plant cultivation. The following 30 drugs were commercially obtained from cultivated plants in Michigan during 1941: stramonium, belladonna root and leaves, henbane herb, digitalis leaves, goldenseal, ginseng, peppermint herb and oil, spearmint herb and oil, sage herb, green hellebore root, wild yam, aconite root, burdock root, calamus, celery fruit and oil, dill fruit and oil, carrot fruit and oil, couch grass, red clover flowers, melilotus herb, white pine bark, asparagus root, blackberry root, and for use in medicines, beet sugar, cherry juice, raspberry juice, etc.

At the Philadelphia College of Pharmacy, Kramer's famous roof garden of drug plants was established years ago, but the college did not have opportunity to introduce experimental plots of drug plants until within recent years it has cooperated in the Mulford Gardens at Glenoble, Pa.

The Massachusetts College of Pharmacy very recently was given opportunity, through the cooperative support of Arnold Arboretum, to establish a drug plant garden on the grounds of Bussey Institution of Harvard University. About two acres of plantings were completed in 1941 and nearly 400 species and varieties of medicinal, aromatic and insecticidal plants are now growing. Provision is made for experimental plots. The project is in charge of Dr. H. W. Youngken, Professor of Botany and Pharmacognosy at the College.

In 1942 the University of Illinois established its first drug plant experimental plots at Desplaines, Illinois, on some ten acres of rich black prairie loam. Suitable greenhouses and laboratories are being erected. Large experimental plots of belladonna, henbane, stramonium and valerian are under way. Strains of stramonium obtained last year from commercial plantings, and yielding up to 0.7 per cent. of alkaloids in the drug, have been used for experimental plots this year and drug of high quality is being obtained. Dr. E. H. Wirth and Dr. Ralph F. Voight are in charge.

Experimental Work of the Division of Drug and Related Plants of the Bureau of Plant Industry of the U. S. Dept. of Agriculture

The most important organization that has influenced drug plant cultivation in the United States is this Division of Drug and Related Plants.

V. K. Chestnut, Botanist in Charge of Poisonous Plant Investigations from 1894 to 1904, carried on some investigations of medicinal plants. The Division took form in 1902 when Dr. Rodney H. True was appointed Physiologist in Charge of Investigations of Medicinal Plants, though the name was changed to "Investigations of Drug and Poisonous Plants and Tea Culture" in 1906. Dr. True was in charge until 1913, when Dr. W. W. Stockberger was appointed Physiologist in charge of the Division which then had the name of "Drug Plant and Poisonous Plants Investigation." Dr. Stockberger was in charge until July 1940, when Dr. D. M. Crooks, Principal Horticulturalist, was placed in charge of the Division. In the meantime the Division name was changed to "Drug, Poisonous and Oil Plant Investigations" and later to "Drug and Related Plants." A. F. Sievers, Senior Biochemist in the Division, has held large responsibility especially during the latter years when Dr. Stockberger was in charge. Within recent years, because of increased interest in drug plant cultivation and because of rather generous appropriations by Congress, the Division has been enabled to considerably enlarge its personnel at Washington and in the field.

The activities of the Division include: (a) studies of poisonous plants dangerous to domestic animals or to man; (b) studies of plants raised from seed or propagating material supplied from foreign lands by agents of the Department of Agriculture and falling within the scope of the Division; (c) experimenting with drug and related plants as to the possibility of commercial production; (d) the production and proper storage of viable seed of drug and related plants to meet the ordinary demand for experimental purposes in the United States; (e) to supply information in the form of publications regarding the experimental or commercial production of drug or related plants that can possibly be grown in the United States.

At times, those in charge of the Division activities have been somewhat discouraged because there seemed to be so little commercial development following the extensive activities of the Division in the way of experimental studies. At one time seed from at least 250

species or varieties of plants were being preserved by the Division for distribution to those requesting same. While many of these were requested for use in medicinal plant gardens and by private individuals for small commercial plots, yet, until World War I, the interest manifested in drug plant cultivation in the United States was very slight.

Since the development of World War II, a shortage of many drugs and related items has been growing more and more pronounced. The Division activities have markedly increased and a number of projects are being carried out on rather a large scale. Some of these undertakings may be mentioned as follows:

(a) An especial effort has been made to accumulate a sufficient supply of belladonna seed to insure an ample crop of the drug in the United States this year. The Division was very successful in this attempt and had on hand last fall a supply of seed with high vitality sufficient for possibly five hundred acres of the plants.

(b) As a considerable proportion of the castor beans used in this country for the expression of castor oil has come from India, an especial effort has been made in the last two or three years to find suitable locations for the production of this seed, to develop the most improved strains for commercial production of the seed, and to work out the best methods of plant production, cultivation, seed harvesting and oil expression. It is understood that the Division has several thousand acres of *Ricinus communis* under cultivation in this experimental work this year.

(c) Pyrethrum as an insecticide has been largely cut off by the war with Japan and stocks in this country have been "frozen" for army use. The Division has been interested in perfecting a machine for harvesting the pyrethrum flowers and some 200 acres of the crop have been reserved for seed production this year.

(d) Experiments on a large scale concerning the production of morphine-bearing poppy heads have been under way for some years. It is believed that suitable locations for the production of this crop and for drying the poppy heads have been found and that some very desirable strains of the plant have been developed. Also improved methods for extracting the alkaloids from the poppy heads have been developed. While the Narcotic Division has primary charge over this work, yet the Drug and Related Plants Division is deeply interested.

(e) Much other experimental work upon drug and related plants is going on, but the projects mentioned above are perhaps the major ones undertaken this year. Cinchona culture has been encouraged in Central America and in Brazil. Supplies of henbane and stramonium seed have been increased. Studies upon several other plants producing insecticidal products have been undertaken. The Division has not been able to accumulate seed of such aromatic drugs as caraway, anise and coriander for extensive commercial use.

Experimental Work by Private Interests

One of the most satisfactory and profitable backings for experimental work on drug plant cultivation is that of a manufacturer of medicines who faces a permanent shortage of a necessary drug. He is ready to invest money, talents and time in such experiments. Furthermore, he backs them until, to him at least, they are commercially successful. Not only the scarcity of the drug, but the inability to get high-grade drug from the wild plants may lead to cultivation.

The scarcity of native drug plants in the United States is illustrated by the commercial or experimental production of hydrastis, ginseng, cascara sagrada, viburnum prunifolium, viburnum opulus, blessed thistle, chenopodium, spigelia, etc., from cultivated plants. The desire to improve quality or develop resistance leads to experimental cultivation of stramonium, burdock (first year roots), ephedra, peppermint, spearmint, thyme, digitalis, etc. To get clean drug without garbling, pure-crop triticum (dog grass) is used. To insure clean drug, a harvesting machine on clean stands of red clover removes the heads without stalk, the leaves being blown out with a fan and screens. Manufacturers and jobbers have manifested interest in the commercial production by cultivation of pyrethrum, belladonna, henbane, capsicum, santonin(?), dill, fennel, anise, coriander, lemon-grass oil, and many aromatic plant items.

All of pharmacy is familiar with the large fine drug gardens and commercial fields maintained for years by Eli Lilly and Company, Parke, Davis and Company, H. K. Mulford Company, Johnson and Johnson, Lloyd Brothers, A. M. Todd Company of Kalamazoo, Mich., and others. Large quantities of commercial drugs have been produced on these farms especially in emergencies, such as the present one.*

Special mention can be made of one of the earliest large scale drug-plant cultivations in this country. John Uri Lloyd became impressed many years ago with the importance of increasing the supply of hydrastis of which his firm used large quantities. He began planting cuttings in a shaded woods, a natural habitat of the plant, in Kentucky a few miles south of Cincinnati, and eventually some 100 acres were planted with scattered

---

**Editor's Note:* One of the largest drug cultivation projects ever attempted in this country has been undertaken this year by S. B. Penick & Company. It consists principally of Belladonna, of which more than 600 acres are being cultivated in five States, and the Penick Company has already paid out about $100,000 to farmers for growing the crop. Harvesting is now in progress and the farmers, who are under contract to the Company, will receive additional payments for the yield. This crop should produce enough Belladonna for a two years' supply although much of it will not be marketed until such time as it may be needed to prevent serious scarcity and runaway prices.

plants or in small plots. The plants grew nicely and good drug was obtained; however, in the course of time Dr. Lloyd noted that increased quantities of the drug were being brought into the factory by local drug gatherers for sale at the market price. A careful investigation showed that most of this drug was being collected from the Lloyd plantings in Kentucky. Fencing, watchmen, guards were of no avail and the hydrastis plants eventually disapperaed from this large area.

Another incident of this very year, 1942, shows further the thievery hazard of drug plant cultivation. A large drug grower of Michigan planted aconite tubers some five years ago on a rather large area in rich-soil, shady woods some distance from the farm buildings. He looked over the growing crop occasionally, the last time rather early this spring, and planned to gather the crop after the flowering of the plants. Going up this summer to gather the tubers, he and his men found the crop entirely removed; not a plant and no daughter tubers left behind; not only was the valuable crop a total loss but no planting stock was on hand.

Commercial Production

Planning—If you are a novice at drug-plant cultivation, carefully plan your program. Choose one drug plant at least as your specialty, upon which to base your reputation. Prepare for a long period of experimental work in the field and in the laboratory. Five years from the planning to the large commercial production is the minimum allowance. During this time you may have some income from your work but don't count on much. Include in your plans an adequate area of land with some diversity of soils and some wooded shade. Include plans for a private laboratory or make arrangements with a commercial laboratory to do your necessary examinations. Endeavor to find a consultant botanist and geneticist to guide you through difficulties.

Propagation—As the plans are forming, arrange for propagation material, either seed or cuttings or whole plants. It is wise to start on a relatively small scale. Propagation material is hard to obtain, especially in the present emergency, and usually high-priced, if any good. Include as a part of your program, the production of your own propagation material for future plantings.

Cultivation—During your first five experimental years study cultivation methods and the use of fertilizers and irrigation, as well as genetical studies, including the use of colchicine and vitamins; also be prepared to combat plant diseases with sprays and dusts as well as more resistant strains of your drug plants.

Collection and Drying—Learn by experiment the proper time to collect the drugs and the best methods of drying them. Develop machinery to save on hand work. Note that time-saving, labor-saving practical methods may pay better than more expensive methods. For instance, alkaloidal herbaceous drugs frequently can be exposed to the sun for a long summer day without deterioration, thus loosing half of their water before going to the drying-room. On the other hand, herbaceous glycosidal drugs begin deterioration upon the least exposure to the sun after removal from the plant.

Every drug should be dried promptly, within 12 hours if possible, but certainly within two or three days. For commercial use shredded or cut drug should be as acceptable as whole drug; the shredding of heavy herbaceous drugs or of heavy roots and stems would greatly facilitate their drying. The use of machinery such as is used for rapidly drying cut alfalfa for preparing the bright green alfalfa meal should be very suitable for drying shredded drugs. The classic example of quick drying of a drug is digitalis. Allen's digitalis of England, standard the world over for half a century or more, was always in the drying-room (artificially heated) within two hours after hand-picking from the plant. Any lot that failed to be spread on the trays within that time was discarded. The moisture content of the drug was reduced to five per cent. or less; the midrib and petiole were removed, and the coarsely broken leaf was packed into bottles which were then hermetically sealed. As long as the bottle remained sealed such drug could be kept in any part of the world practically without deterioration.

Reduction of Labor Costs—Where cheap labor is available (not in excess of one American dime per hour), hand labor may cost less than machine labor, and if the human laborers are well trained, the product may have certain advantages over the machine product. Labor at such a price is available in Asia and the East Indies, most parts of Africa, over a large portion of South America, Central America, Mexico and the West Indies and in some parts of Europe. It definitely is not available in the British Isles, Canada and the United States. In these countries, therefore, the only answer is machinery.

Satisfactory machinery for seeding in rows, or by checking, is available at reasonable price in normal times anywhere in the United States. Also suitable machines for transplanting seedlings or cuttings is available. All are familiar with the horse- or tractor-drawn machinery for soil preparation and for cultivation of the growing crop. Where irrigation water is available, there are satisfactory facilities for handling the water.

The real rub usually comes with harvesting machinery. However, much machinery is available that is very suitable for harvesting drug crops. The first attempt with the cultivation of dill, made last year in a small locality in Michigan, resulted in some 25 acres of herb weighing in the green state more than five tons per acre. The whole lot should be harvested and distilled within a week. This was accomplished by cutting the crop with tractor-mower, bunching with a hay

(*Continued on page 319*)

ADVERTISING AND TAXES

The Treasury Department agrees on what advertising can be charged as expenses.

THE deductibility of advertising expenses on corporate income tax returns has been the subject of much comment, especially since many firms have been largely engaged in war, and since Secretary of the Treasury Morgenthau criticized advertising as a means of tax evasion. To clarify the situation, the Association of National Advertisers has held conferences with the Treasury Department. As a result of these conferences, the Association addressed a letter to the Treasury Department outlining the opinion of the Treasury officials. This letter was confirmed by the Treasury Department. The statements approved by the Treasury Department are:

General Advertising Policy

"The Treasury Department and the Bureau of Internal Revenue fully appreciate the important part advertising plays in our national economy and there is no intention to restrict reasonable and normal advertising by disallowing it as a deductible expense. This was attested to by Secretary Morgenthau in testifying before the Joint Congressional Committee on Taxation when he said:

'The test of whether expenditures for advertising are deductible is whether they are ordinary and necessary and bear a reasonable relation to the business activities in which the enterprise is engaged. This is not intended to exclude institutional advertising in reasonable amounts or good will advertising calculated to influence the buying habits of the public. If such expenditures are extravagant and out of proportion to the size of the company or to the amount of its advertising budget in the past, or if they are not directed to public patronage which might reasonably be expected in the future, such payments will be disallowed.'

"The Internal Revenue Bureau is charged with the responsibility of collecting Federal taxes, among which are the Income Tax and the Excess Profits Tax. It is governed by statute and expects full cooperation from the taxpayer whereby the Government receives its full share of taxes. Thus it is the duty of the Bureau, particularly in view of Excess Profits Tax, to prevent abuses and attempts to avoid the high tax rate. The Bureau has full power to disallow unreasonable expenses for tax purposes.

Increased Advertising Costs

"The Bureau recognizes that advertising costs have been forced upward by reason of increased space and time rates, increased cost of printing, engraving, art work and other advertising production costs. In this connection, the Bureau suggests that advertisers keep their cost records as complete as possible.

Increased Need for Advertising

"The Bureau recognizes that in many cases the rationing of gasoline and tire restrictions have cut down on the number and frequency of calls salesmen can make on dealers and that this has thrown an added burden on advertising since expenditures for direct mail and dealer house organs must be increased to keep necessary contact with wholesalers and dealers. This also affects the cost of installation of displays formerly handled by salesmen.

Salvage Campaigns

"Many advertisers are using a large part of their appropriations and, indeed, have increased them, for the purpose of salvaging materials necessary for the war effort, such as fats and grease, iron, steel, non-ferrous metals, rubber, etc. The Bureau recognizes that such advertising efforts, if they bear a direct relation to the business carried on by the corporation, are essential to obtain raw materials and are, therefore, a normal business expense. As such they will be deductible if made with a reasonable expectation that the corporation's business will be benefited by an increase in materials essential to its operations. The Bureau further recognizes that such use of advertising is normal under ab-

normal conditions, conditions which have never before existed.

New Products

"Priorities, the cutting off or curtailing of imports, and new research have resulted in some manufacturers' bringing out new products. In other cases substitutes have had to be made. In these cases, the manufacturer must inform the public and the trade through advertising in justice to himself, his dealers and the consumer. The Bureau does not question this and will take into consideration all normal factors incident to launching a new product. Such expenditures which are reasonable in amount, taking into consideration the facts in each case, will be allowed as deductions for Federal income tax purposes.

Added Lines

"In certain instances, manufacturers, in order to keep their dealers in business, have been supplying them with alternate products. For example, a rubber manufacturer, to aid his dealer outlets, has added such items as luggage, tools, sports equipment, furniture, etc., to replace tires no longer available. The Bureau recognizes that such a manufacturer must merchandise these to the dealer and the public through advertising. Expenditures for this purpose which are reasonable in amount taking into consideration the facts in each case will be allowed as deductions for Federal income tax purposes.

Changes in Buying Habits

"Some manufacturers, because of priorities, must attempt through advertising to change buying habits. Curtailment of the use of metals has meant the elimination of many types of containers, of small size packages, etc. For example, beverage manufacturers, because of the shortage of plate for bottle caps, must try to educate the public to use large instead of small size bottles. The Bureau recognizes that this calls for advertising expenditures. Such expenditures, if reasonable in amount taking into consideration the facts in each case, will be allowed as deductions for Federal income tax purposes.

Advertising to Speed War Production

"Many companies are using advertising and advertising technique to speed the war effort among their own employees. So far this has been directed at one objective—to convince the shop and office worker that he is part of the all-out war effort and hence that carelessness and inefficiency, unnecessary absences and accidents on the production front are detrimental to the men on the fighting front. To accomplish this job, posters, banners, house organs, local newspaper advertising, direct mail, local window displays, motion pictures, spot radio, and many other advertising devices have been used. Undoubtedly, many companies will call on advertising to do a similar job in furthering the sale of war bonds through the payroll-deduction plan. The Bureau recognizes that the expense incident thereto is a justifiable one so long as it is reasonable, whether that expense is listed as a production or a selling (advertising) cost.

New Companies

"Since the war began, certain new companies have come into being and have invested many thousands of dollars in plant equipment for the production of war material. As long as the war lasts, they will have nothing at all to sell the public. Those companies deem it but good business practice to advertise so that when the war ends and they turn to peace time production, the public will be familiar with their names and hence their plant investment may be protected. The Bureau recognizes that advertising by such companies is a proper deductible expense so long as such expenditures are reasonable. As Secretary Morgenthau has said: 'The test of whether expenditures for advertising are deductible is whether they . . . . bear a reasonable relation to the business activities in which the enterprise is engaged. . . . . If such expenditures are extravagant and out of proportion to the size of the company . . . . or if they are not directed to public patronage which might reasonably be expected *in the future*, such payments will be disallowed.'

In General

"It is, of course, impossible for the Bureau to lay down a definite rule in advance which will fit all situations. In general and as Secretary Morgenthau has indicated, the Bureau will be rational and fair, recognizing that advertising is a necessary and legitimate expense of doing business as long as it is not carried to an unreasonable extent or becomes an obvious attempt to avoid tax payments. This principle applies whether the company has no government contracts, whether it is selling both to government and to consumers or industry, whether it is wholly converted to war production, whether it is a new company selling only to government, or whether it is a new company selling to government and industry.

"The Bureau has no desire to be arbitrary but it will, of course, uphold the statutes. Its collectors will, in each individual case, examine the records and act accordingly. If an advertiser feels the decision of the collector is wrong, the burden of proof of that fact rests upon him. He can, of course, appeal the decision if he feels an injustice has been done.

Advertising for the Government

"Under Section 23 (o) of the Code, an individual may make a gift to the government and deduct that gift from his income tax. Section 23 (q), however, referring to corporations, omits this provision. There is, therefore, no provision in the law for allowing as a deductible expense monies or time or space given directly to the

(*Continued on page 280*)

UREA

By M. A. LESSER

Urea has the unique distinction of having been the first organic chemical ever to be synthesized in the laboratory. But Wohler's[1] miracle was not destined to remain a laboratory curiosity. Since 1828, when its synthesis opened up a new world of chemistry, urea has become a major industrial chemical. What is more pertinent to this discussion, however, is the fact that urea has already proven itself a valuable therapeutic agent with important medicinal uses and potentialities.

Urea gets its name from the fact that it was first isolated, in 1773, from urine. This rather unfortunate choice of raw material has been, in the opinion of some writers, a definite deterrent to the wider use of this chemical in medicine. Hence, modern authors have urged that urea's synonym, carbamide, be employed as a more suitable term for use by physicians when describing or prescribing this drug. Despite all these efforts, however, it is more than probable that urea will remain the more familiar term, regardless of its unpleasant connotation.

As available today, urea is a purely synthetic product and is a pleasant substance to use. The colorless, transparent, prismatic crystals are almost odorless and have a cooling saline taste. Freely soluble in water, urea solutions have no odor or color. As a matter of fact, Robinson[2] working with 2% urea solutions for treating wounds, advised that some inert coloring matter be added to distinguish them from water or salt solution.

Urea is a normal physiologic substance, being the chief end-product of protein metabolism. The quantity present in the urine varies according to the amount of protein ingested, but on an average approximates 2 per cent. The blood of normal persons likewise contains urea, in quantities ranging from 20-30 mg. per 100 cc. This, however, may be doubled after a protein meal.[3]

Moreover, urea is found in all organs and tissues of the body. It is present in approximately uniform concentration, except in adipose tissue in which it is lower, and in renal tissue, in which it is higher.[2] According to McGuigan[3] there is some evidence that urea is essential to normal function. He points to the observation that the addition of a trace of urea to artificial perfusion fluids is beneficial to the perfused heart and other organs. Urea, however, is not utilized in nutrition and when additional amounts are administered, it is promptly and completely excreted, mainly by the kidneys. A small amount is also excreted in sweat.[4]

The standard A. M. A. text, "New and Nonofficial Remedies" (N.N.R.),[5] states that urea is not poisonous, but most pharmacologists prefer to say that it is practically nontoxic. Urea was formerly thought to be the cause of uremic symptoms. Present evidence, however, indicates that uremia is due to poisoning from organic substances of unknown nature; probably to antecedents of urea which accumulate in the blood because of abnormal metabolism.[3] However, it should be mentioned that Hewlett and his associates[6] found the administration of 100 Gm. of urea capable of producing symptoms of retention uremia in man. Conversely, cases of nephritis are on record in which there were very high blood urea levels and in which no uremic symptoms were noted.[7] Indeed, McGuigan[3] states that large quantities of urea may be injected into the blood without producing symptoms.

Urea is not an official drug in the United States, that is, it is not described in the U. S. P. or the N. F. The substance is, however, listed as a drug in the "British Pharmacopoeia" and is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.[5]

In industry, urea finds extensive use in the manufacture of plastics, fertilizers, adhesives, textile finishes, printing pastes, wood-treating preparations, varnishes and in the manufacture of pharmaceuticals, more especially the sedative barbiturates. In medicine, this substance is finding wide use as a diuretic, as a local anesthetic in combination with quinine, in the treatment of wounds to prevent or eliminate necrosis, in otolaryngeal infections, and in oral preparations. There

are indications that urea may also have other uses in medicine and in related fields.

Urea has a firmly established place among modern diuretics.[8] These are drugs employed to stimulate the flow of urine and so hasten the elimination of excess fluid from water-logged, edematous tissue. Although urea had been used as a diuretic in Germany some years before, the first careful American clinical study of its value for such purposes was published in 1925.[9] Though not as frequently used as certain other diuretic drugs, urea does enjoy a good measure of popularity and has definite advantages and certain disadvantages as a diuretic.

The diuretic action of urea depends upon osmotic action in the lumen of the renal tubule, and because of its low molecular weight, this substance exerts considerable osmotic pressure in solution.[10] However, diuresis with urea depends upon good renal function and its excretion is delayed in cases of chronic interstitial nephritis. Hence, the use of this drug is contraindicated in instances where there is markedly impaired renal function. However, mild elevations of blood non-protein nitrogen do not preclude its use.[11] It should also be mentioned that some patients experienced nausea after taking urea.

Urea is highly useful in cardiac cases. According to pharmacologists Goodman and Gilman,[11] successful results with urea as a diuretic have been obtained in cases of long standing cardiac edema, as well as in cases of chronic nephrosis and the nephrotic type of glomerulonephrosis. It has also been stated that urea is especially helpful in preventing the recurrence of cardiac edema after the original dropsy has been controlled by rest, digitalization and ordinary diuretic management.[12]

European investigators[13] have found that when urea is used as a diuretic in ascitogenous cirrhosis, its effect is stronger than that of other diuretic substances, such as theobromine, diuretin, calcium chloride, ammonium chloride, mercury cyanide and hypertonic glucose serum. In some cases, urea even exceeded the effect of the organic mercurial diuretics. They found that the increase in blood urea concentration after ingestion is without danger.

Urea has the marked advantage that it may be administered continuously for long periods of time. Miller and Feldman[14] fully demonstrated that urea has no deleterious effect even when taken daily for months or even years.

Though usually administered by mouth, urea solutions may also be given intravenously when a more powerful and more immediate diruetic action is desired. To produce diuresis, large quantities of urea must be administered, doses of from 30 to 60 Gm. being generally necessary. The drug is best given in divided doses during the day, e.g. three times per day after meals.

Because of its saline taste, solutions of urea are given in various vehicles to make the preparations more palatable. Thus it has been suggested that the 40 or 50 per cent. aqueous solutions may be diluted with an equal volume of some fruit syrup, or taken in carbonated water, beer, tomato juice, coffee or tea.[12] Syrup of acacia is a particularly good vehicle for dispensing urea as a diuretic. Fantus[15] suggested the following combination, a teaspoonful in water every four hours, as a suitable preparation:

Urea	10 Gm.
Syrup of acacia, to make	50 cc.

The local anesthetic, Quinine and Urea Hydrochloride, U. S. P. offers a most interesting example of the use of urea in combination with other valuable drugs. An outstanding characteristic of this combination (the action of which is due largely to the presence of the quinine) is the fact that, when injected hypodermically, it exerts an anesthetic action much more prolonged than that of cocaine. In some instances the anesthetic effect is reported to persist for days.[16] Because of this persistent effect, the product is frequently used in operations about the anus and genito-urinary tract.[3] It may also be of particular value in conditions, such as pruritus ani, where anesthesia of long duration is desired.[11]

Solutions of from 0.25 to 1 per cent. are generally considered safe for producing local anesthesia. Stronger solutions must be used with caution, however, since these may produce sufficient irritation to cause local necrosis and fibrosis.

Quinine and urea hydrochloride is also useful in the treatment of malaria by intramuscular and intravenous injection. Great caution is necessary when the drug is given intravenously. When administered by this route, the concentration should not exceed 0.5 per cent.[16]

Unquestionably, the most interesting and the most important use of urea is its employment in the treatment of wounds to prevent or overcome necrosis. Very recently, in an article in *The Military Surgeon*, Holder and MacKay,[17] wrote: "Most important as a factor in optimum healing of wounds is the prevention and elimination of necrotic tissue and debris regardless of the amount of contaminating material or the depth of penetration. It is generally recognized that healthy living cells have a remarkable power to combat bacteria; while dead or devitalized tissues are powerless against bacterial multiplication and invasion and they provide optimum media for bacterial growth. Healing of wounds, therefore, depends upon and is inseparably interwoven with the removal of necrotic tissue. This factor we consider of prime importance."

They point to the fact that no matter how thoroughly or skillfully wound debridement is performed, devitalized tissue, bacteria or both may be retained in the wound. For this and other reasons, these surgeons prefer to remove only the obviously damaged structures and gross debris of a wound, leaving more accurate and physiological debridement to carbamide (urea) therapy. Their own wide, five-year experience with this form of treatment,[18, 19] backed up by that of other investigators, indicates very definitely that urea therapy is simple and effective; rapidly resulting in clean wounds with concurrent reduction in the healing time.

Contrary to the general view, the use of urea as such in wounds is not very new, though the reasons for its earlier use are not the same as those noted today. Back in the last World War, in 1915, Symmers and Kirk[20] first successfully used urea in treating infected wounds. They attributed their excellent results to the bactericidal action of the drug, but for some unexplained reason their work received but little attention. It was not until 1933, that urea was again mentioned in connection with wound treatment. At that time, Miller[21] advocated the packing of urea crystals into sloughing cancers to suppress the foul, peculiarly penetrating odor characteristic of such lesions. The real beginning of interest in urea therapy was not evidenced until 1935, when Foulger and Foshay[22] issued a report on the good results obtained with urea in the treatment of a variety of infected wounds.

This interest was further intensified by the discovery of the relationship between maggot therapy, allantoin and urea.[23, 24] In 1936, Robinson[2] as a result of his extensive investigations on maggots, had come to the conclusion that urea was probably the responsible agent in wound healing—a conclusion verified by the use of this chemical in the treating of many varied types of wounds. In their paper published the following year, Holder and MacKay[18] reported their views on the rationale and mechanics of such wound treatment. Their views are, in general, the basis for the present uses of this valuable agent.

Actually, however, the use of urea on wounds extends much further back than 1915, indeed centuries back to at least Medieval times. Urea as such was not used, but urea as a constituent of urine, was the remedy employed. It is a matter of common knowledge that in many parts of the world, including Europe and America, urine has been used to prevent infection and to stimulate cleansing and healing of wounds. Indeed, the practice of using urine still persisted until quite recent times at least in parts of the United States.[25] Recently, Bello[26] reported that Peruvian aborigenes in isolated sections get very good results in the treatment of cuts and prolonged suppurations by the use of this natural urea solution. As a matter of fact Robinson[2] used 2 per cent. urea solutions in his work—about the same concentration as found in urine. He observes that, on the basis of scientific findings, the use of urine as a remedy for non-healing wounds appears to be essentially sound, despite the fact that it seems so fantastic.

It is now appreciated that a bactericidal effect is not the prime factor responsible for urea's action on wounds. However, strong urea solutions do have some bactericidal action and an even more definite bacteriostatic influence, which is most desirable in infected wound therapy. According to Holder and MacKay[18], who stressed the value of concentrated solutions, the mechanism of urea therapy is chiefly through its solvent action on proteins, which leads to the removal of the debris, incrustations and dead tissue, which mechanically and by harboring bacteria, are usually the chief deterrents to normal healing. Although it was difficult to determine the influence of carbamide on the rate of healing, it appears certain that the rate was not retarded and was "immeasurably improved" in grossly infected wounds.[17]

Robinson,[2] working with quite dilute solutions, came to very similar conclusions. He reported that, in general, the urea treatment produces a conspicuous cleansing of the wound, with a lessening of the foul odor through the removal of necrotic material; a reduction in the pyogenic infection; and a rapid development of granulation tissue. The laboratory and clinical findings of Chiariello[27] indicated that urea stimulates autalysis of dead tissues and increases the local defenses of the new tissues against the local infection.

It is reported[18] that there appears to be no condition that may be benefited by urea therapy in which the use of this agent is contraindicated. Since it is practically nontoxic and harmless in any reasonable quantity it may be used freely. Even in contact with the open wound (an essential for its effective action) it retains its desired activity. It offers no danger to the surrounding skin.

While urea appears to be without effect on living tissue, the use of strong solutions or as a crystal pack may cause pain in a small percentage of patients. This is especially true just prior to the growth of healthy granulation tissue in wounds.

It would appear from the literature that there is hardly a type of wound in which urea has not been used with benefit. Holder and MacKay, for example, employed it in the treatment of various types of ulcers, in infected wounds and in infections such as carbuncles, cellulitis, second and third degree burns and osteomyelitis. Robinson's report included a range of conditions such as varicose and diabetic ulcers, carbuncles, suppurating X-Ray burns of long duration, infected heat burns, intraoral infections and certain skin infections. These beneficial effects were duplicated and the indications for carbamide therapy broadened by the work of other physicians.[26, 27, 28, 29, 30, 31] Especially interesting, are the reports concerning the use of urea in otolaryngology. Mertins,[32] for instance, employed urea with good results in treating chronic otitis media and never found it to injure the delicate tissues involved. Similarly, Lewy[33] employed urea quite extensively and with excellent effect in diseases of the ear, nose and throat.

One point upon which the various investigators do not agree is the concentration of the urea preparations employed. Good results have bene obtained by those using 2 per cent. solutions, but equally good or better results have been obtained with more concentrated solutions and many have used the crystals as such. In their 1939 report, Holder and MacKay[19] reiterated the advantages of the more concentrated solutions; pointing to the fact that dilute preparations provide excellent bacterial growth media and that concentrated solutions have given superior results. In general it would appear

that the trend is toward the more concentrated preparations and many prefer to use the crystals direct when feasible.

If indicated, urea crystals are applied directly to the wounds. When solutions are used, these are generally applied on saturated gauze dressings and may be covered with oiled silk or waxed paper. The solutions may be injected into cavities or sinuses. For large areas, immersion in a tub of the solution has been suggested.[2]

Robinson noted that urea gives excellent results in a greaseless ointment base when used in the treatment of ambulatory cases. He stressed that greasy bases be avoided since these interfere with the action of urea. Urea, up to 15 per cent., is easily mixed with a vanishing cream or greaseless type ointment, but the base must be of a fairly firm consistency because urea has a softening effect. The use of surgical lubricating jelly was also suggested. At this point Robinson again stressed the importance of direct contact between the urea and the affected tissues.

Suitable preparations of this type have been prepared and described in the literature. Typical is the carbamide paste described by Fantus and Dyniewicz.[34] This consists of:

Benzoic acid	2 Gm.
Citric acid	10 Gm.
Carbamide (Urea)	20 Gm.
Tragacanth powder	100 Gm.
Glycerine	100 cc.
Ringer's solution, to make	1000 Gm.

These workers report that this carbamide paste has been found remarkably successful for clearing up ulcers encumbered by foul and necrotic material. The shedding of the dead material and the appearance of bleeding are indications for a change to another variety of dressing.

A very similar preparation was described by Mattick[35] in his discussion of urea in the care of cancer patients. His preparation consisted of 20 per cent. of urea in an aqueous tragacanth-glycerine base. Acacia jellies have also been suggested as suitable media by Baker.[30]

In an article in *Science* in 1940, Stephens[36] reported work which indicated that rinsing the mouth with a solution of urea might be effective in protecting teeth against decay. It was also found that solutions of carbamide, used in conjunction with a toothbrush, are also effective in cleaning teeth, and clinical observations indicated that the treatment may be of value in some cases of gingivitis and pyorrhea.

Further work along these suggestive lines eventuated in the development of Wach and his associates[37] of a mouth rinse with the following formula:

Quinine hydrochloride	0.5
Urea (C. P.)	4.0
Glycerine	25.0
Sterile distilled water, to make	100.0

Flavoring and coloring agents may be added and the solution adjusted to a pH of 6.8 to 7 by sodium hydroxide. Properly used, it was found that this preparation caused a rise in the salivary pH and a marked reduction in bacteria. An effective germicide and buffering agent, the rinse is described as nontoxic, non-irritating to mucous membranes, inexpensive and stable if carefully prepared and stored. Investigations on this and similar preparations are still under way, but the results already obtained are most interesting and indicative.

Another rather unusual application for urea is its employment in the treatment of warts. Basing his studies on the virucidal power of strong solutions of urea and their harmlessness in contact with human tissues, MacKay[38] experimented with induced warts growths on monkeys. With this data as a basis, he undertook the treatment of human warts. A 50 per cent. sterile aqueous solution of urea was used, from 0.1 to 0.3 cc. of this solution being injected into the base of each wart. Pain was felt, but it was moderate in most cases.

All of MacKay's six patients were cured by the first injection. Of sixteen others treated by other physicians, eight were cured by one injection, while several required a second treatment. A few cases resisted treatment entirely. In those cases where the treatment was effective, cures resulted in from five to eighteen days.

Several years ago this same investigator, in collaboration with Lamson[39] proposed the use of urea as a solvent in the preparation of antigen extracts. They found that extracts of protein constituents from food with urea solutions seem to be especially suitable for the preparation of allergens. Such products seldom gave reactions with non-allergic individuals and the method permitted of considerable concentration. However, the protein was denatured to a certain degree.

BIBLIOGRAPHY

1. Wohler, F.: Ann. d. chem. 37:330, 1828.
2. Robinson, W.: Am. J. Surg. 33:192, 1936.
3. McGuigan, H. A.: "Applied Pharmacology," St. Louis, Mosby, 1940, pp. 220-1., 538.
4. Sollmann, T.: "A Manual of Pharmacology," Ed. 5, Philadelphia, Saunders, 1937, p. 831.
5. Council on Pharmacy & Chemistry: "New and Nonofficial Remedies," Chicago, Amer. Med. Assoc. 1941, p. 533.
6. Hewlett, A. W., Gilbert & Wickett: Arch. Int. Med. 18:636, 1916.
7. McLean, A. D.: J. A. M. A. 69:437, 1917.
8. Lesser, M. A.: Drug & Cosm. Ind. 44:437, 1939.
9. Crawford, J. H. & McIntosh, J. F.: Arch. Int. Med. 36:530, 1925.
10. Queries & Minor Notes: J. A. M. A. 110:1945, 1938.
11. Goodman, L. & Gilman, A.: "Pharmacological Basis of Therapeutics," New York, Macmillan, 1941, pp. 631-2.
12. Queries & Minor Notes: J. A. M. A. 113:1755, 1939.
13. Dimitriu, C. C., Cosma, G. & Schwartz, L.: Bull. acad. med. Roumanie 4: 477, 1939.
14. Miller, H. R. & Feldman, A.: Arch. Int. Med. 49:964, 1932.
15. Fantus, B.: "Technic of Medication," Ed. 3, Chicago, Amer. Med. Assoc. 1938, p. 345.
16. Hatcher, R. A.: "Useful Drugs," Ed. 10, Chicago, Amer. Med. Assoc. 1936 p. 172.
17. Holder, H. G. & MacKay, E. M.: Military Surg. 90:509, 1942.
18. Holder, H. G. & MacKay, E. M.: J. A. M. A. 108:1167, 1937.
19. Holder, H. G. & MacKay, E. M.: Am. Surg. 110:94, 1939.
20. Symmers, W. St. C. & Kirk, T. S.: Lancet 2:1237, 1915.
21. Miller, W. M.: J. A. M. A. 100:1684, 1933.
22. Foulger, J. H. & Foshay, L.: J. Lab. & Clin. Med. 20:1113, 1935.
23. Lesser, M. A.: Drug & Cosm. Ind. 42:451, 1938.
24. Council on Pharmacy & Chemistry: J. A. M. A. 110:813, 1938.
25. Elmore, C. J.: J. A. M. A. 110:758, 1938.
26. Bello, E.: Reforma Med. 25:6, 1940.
27. Chiariello, A. G.: Folia Med. 25:61, 1939.
28. Stonham, F. V.: Indian Med. Gaz. 70:575, 1940.
29. Stonham, F. V.: J. Roy. Army, Med. Corps 77:240, 1941.
30. Baker, G. E.: Rocky Mt. M. J. 35:310, 1938.
31. Bogert, L. M.: J. Michigan M. Soc. 36:258, 1937.
32. Mertins, P. S., Jr.: Arch. Otolaryngol. 26:509, 1937.
33. Lewy, R. B.: Arch. Otolaryngol. 26:195, 1937.
34. Fantus, B. & Dyniewicz, H. A.: J. A. Ph. A. 28:548, 1939.
35. Mattick, W. L.: Public Health Nursing 32:152, 1940.
36. Stephen, R. M.: Science 92:578, 1940.
37. Wach, E. C., O'Donnell, J. F., & Hine, M. K.: J. A. D. A. 29:61, 1942.
38. MacKay, E. M.: Arch. Dermat. & Syph. 41:736, 1940.
39. MacKay, E. M. & Lamson, R. W.: Proc. Soc. Exptl. Biol. & Med. 34:123, 1936.

SKIN PROTECTIVE CREAMS

By JOSEPH KALISH

ALTHOUGH some men doing occasional dirty work on their cars or other amateur operations likely to leave their hands in bad condition may have used protective creams before they started to work, demand in the past has been far less than the intrinsic virtues of the product warranted. Leave it to the women! We very strongly suspect that the recent greatly increased demand for products to protect the hands and to permit them to be more thoroughly cleaned at the end of the day stems largely from the influx of women into war work. The rough and tough male mechanic and chemical operator would not do anything so effeminate as rubbing a cream on his hands and face before starting to work. But he has been changing his mind recently, since he has seen his feminine co-worker, by the use of creams, continued at her job untroubled by the imbedded grime and occupational dermatitis that have been bothering him.

In 1938 it was reported that occupational skin diseases represented 10 to 12 per cent. of all skin diseases, and that 65 per cent. of all occupational disease, excluding accidents, were skin affections. In fact, we have in our library here an 800 page book devoted solely to occupational skin disease ("Occupational Diseases of the Skin," by Louis Schwartz and Louis Tulipan). More than a quarter of a million of industrial workers in peace time annually lose time from their jobs because of skin diseases directly traceable to chemicals they encounter in their work. We have no idea what the figure now is, but whatever it is, it can be substantially reduced by the efforts of cosmetic manufacturers in making available and popularizing the use of protective products.

Occupational dermatitis can be prevented, of course, by preventing contact between the skin and the active irritant. Unfortunately, this is not always directly possible. Completely inclosed manufacturing systems are not always feasible; adequate protective clothing and gloves may be too uncomfortable; the nature of the operation itself may make it almost impossible to prevent contact at some time or another. Nevertheless, the enforcement of general cleanliness and the use of protective devices, clothing, and preparations could bring about substantial reduction in industrial dermatitis.

According to Schwartz and Tulipan, discussing protective ointments, "Some of them are useful, but others only imperfectly perform their function. They may be easily rubbed off during work or may be washed off by perspiration. Some of them may offer protection against a particular chemical. There are very few, however, that can protect the skin against strong alkalies. There are some instances in which protective ointment may be of value, especially if used during the time pending installation of the more permanent protective measures. Probably the greatest virtue of these ointments is that they are usually washed off by the workman before leaving the factory and in so doing he also removes the irritant chemicals from his skin." The partial skepticism of these two authorities should act only as a challenge to research men in this industry.

The ideal skin protective must possess certain attributes. It must be easily spread; it must remain stable in the presence of the irritating agent; it should be nondehydrating; it should not be readily transferable from the skin surface to which it has been applied; the film it forms should remain continuous; it should not act as a heat insulator; it should be somewhat absorbed by the skin so that it will fill the hair follicles; it should be easy to remove without recourse to harsh detergents.

Protectives may be classified as fats, jellies, and emulsions. In the first class are petrolatum, alone or mixed with lanolin, beeswax, etc. Greases of this type are rubbed into the skin and should provide a high degree of protection against water soluble irritants. Only in most extreme cases, however, would they be acceptable, since they would give little protection against greases and oil-soluble irritants, would be annoying in use, and would be relatively difficult to remove at the end of the day.

A jelly or mucilage could give good protection against oil-soluble irritants. It would be easily applied and easy to remove. In fact, it would generally be far too easy to remove, perspiration being usually sufficient to destroy the continuity of the film. Nevertheless, there is room for research in this type of product. The addition of barrier solids to the jelly or mucilage may greatly increase protection; new synthetic gums such as methyl cellulose may offer virtues in the way of producing

films that are no longer easily dissolved in water. Methacrylate and similar water-soluble synthetic resins may also be useful, but they must be tested in advance to make sure that they themselves do not cause skin irritation. In some instances it may be possible to apply a water-soluble jelly or mucilage to the skin, allow it to dry to a film, and then treat the film with another solution and make it insoluble and impermeable. As an example, a gelatin film may be made insoluble and impermeable by after-treatment with formaldehyde or alum solution. Formaldehyde is a potent irritant, however, and the impermeable film may either be too brittle to give protection or be too difficult to remove.

Emulsions offer the best promise for application to skin protective formulation. They might well replace grease applications where the latter are necessary for protection against water-soluble irritants, since the emulsions can always be applied more smoothly and uniformly to provide a more nearly invisible film. We have in mind at this point only water-in-oil type emulsions, one based on an absorption base, with plenty of petrolatum, some wax, and little water should be acceptable, especially if a suitable barrier compound is present.

The question of a barrier compound warrants some discussion. Leather or rubber gloves are mechanical barriers, preventing contact between skin and the irritant. A flaky powder, such as talc will form an adherent layer on the skin that is not easily wet by water. In itself the powder is acting as a barrier. It has the disadvantage, however, of being very readily rubbed off by slight friction. Supplemental to the layer left by an emulsion, the solid barrier material acts most effectively, barring the entry of both oil- and water-soluble irritants. The powder chosen should be cheap, inert, non-absorbent, adherent, and preferably flaky in structure to permit formation of a uniform impermeable layer. Talc and the metallic stearates are usually favored. Limitations in the supply of zinc compounds today gives preference to magnesium stearate.

Barrier powders must be present in emulsions in quite substantial quantities, between 15 and 20 per cent. since the film left on the skin will be more effective if it can be considered to be solid barrier with a binder of cream rather than as a cream containing a small amount of barrier. As an example of the water-in-oil emulsion mentioned above, the following should serve as a basis for further experiment.

Absorption base	20.0
Petrolatum	15.0
Mineral oil	10.0
Beeswax	5.0
Ceresin	5.0
Talc	15.0
Water	30.0

Melt all of the ingredients, excepting water and talc, together until a homogeneous solution is obtained. Cool to 40 °C. and incorporate the water brought to the same temperature a little at a time until a smooth cream results. At room temperature, grind the talc with the cream, preferably in a colloid mill. Add more water or wax or talc to make a harder product, add mineral oil to make the product softer. This cream is not greaseless and is probably not acceptable where the hands must be kept free from stickiness. It is not readily removable by perspiration and water, however, and should give adequate protection. Soap and water should remove it readily when desired.

For the most part, vanishing-type creams can not give the utmost in protection, since they are quite readily attacked by moisture. Where it is important to keep the hands greaseless they do a good job and are very readily removed at the end of the day. Here again the presence of a barrier powder is important. The cream is based either on glyceryl monostearate (containing soap and self-emulsifying) or on alkali plus stearic acid. Some greasy material such as petrolatum or lanolin should be present to reduce permeability of the film to water, and enough hygroscopic agent such as glycerin should be present to assure a non-rolling cream. The creams are made in the customary manner. With glyceryl monostearate as the emulsifying agent, all of the components of the cream are boiled together, stirred to complete emulsification, and stirred until cold. For stearate creams, melt the wax and oil constituents together at about 60 °C., heat the water, glycerin, and alkali together to the same temperature, mix and thoroughly emulsify both solutions and stir until cold. In both cases, grind the solid barrier material with the cream at room temperature, preferably in a colloid mill.

Stearic acid	10.0
Beeswax	2.0
Petrolatum	4.5
Triethanolamine	1.5
Glycerin	8.0
Water	54.0
Magnesium stearate	20.0

Advertising and Taxes

(Continued from page 274)

government for advertisements signed solely by a government bureau or department. If, on the other hand, advertisements featuring the sale of War Bonds, conservation, nutrition or other government objectives are clearly signed by a corporation, such as 'This space donated by the John Jones Co., manufacturers of Jones' vitamins,' the advertisement will be considered as an institutional or good will advertisement of the manufacturer and hence, deductible, *provided, of course, that the expenditure is reasonable and not made in an attempt to avoid proper taxation.*

'Advertising'

"By 'advertising,' the Bureau includes all forms of advertising recognized by the industry of which the individual company is a part, such as newspaper, periodical, business paper, radio, car card, outdoor, display, motion pictures, house organs, direct mail, etc.

AUSTRALIAN EUCALYPTUS OILS

By DR. ERNEST GUENTHER

(Continued from last month)

EUCALYPTUS DIVES

According to Penfold and Morrison,[1] there exist four physiological forms of the broad-leaf peppermint, their respective oils being of great diversity in regard to chemical constitution, as shown in the following table.

	Type	*Var. "A"*	*Var. "B"*	*Var. "C"*
Percentage yield of oil	2.5 to 4%	1.5 to 4%	3 to 4%	2 to 3%
Specific Gravity	0.892 to 0.907	0.863 to 0.877	0.906 to 0.916	0.916 to 0.924
Optical Rotation	− 58° to − 80°	− 44° to − 70°	− 13° to − 28°	+1° to +8°
Piperitone	46 to 53%	5%	10 to 20%	Under 5%
Cineol			25 to 45%	60 to 75%
Phellandrene	About 40%	About 75 to 80%	Present in quantity.	Absent.

Oil of *E. dives* var. "*C*" is free of phellandrene and almost free of piperitone but has a very high cineol content which makes it a valuable medicinal oil. Its very antithesis, oil of *E. dives* Type, on the other hand, is one of the most important technical oils used as solvent, in disinfectants and for ore flotation. It contains no cineol but about 50 per cent. piperitone and 40 per cent. phellandrene. From pipertone, its main constituent, thymol and menthol can be manufactured. *E. dives* contains more essential oil than any other eucalyptus species, which makes its exploitation worth while. Each variety occurs in large areas, one variety usually predominating over the others at a ratio of, roughly, twenty to one. In the Tumbarumba district of New South Wales, for instance, *E. dives* var. "*C*" predominates over *E. dives* Type.

OIL OF E. DIVES VAR. "C"

In regard to physical and chemical constants, this oil is practically identical with oil of *E. Australiana* and cannot easily be distinguished from it.

Vernacular name of the plant:	Broad-leaf peppermint.	
Occurrence:	In the Tumbarumba district of New South Wales. The plant could easily be cultivated.	
Yield of oil:	Two to 4 per cent.; usually 3 per cent.	
Length of distillation:	Eight to 14 hours; 8 hours is usually sufficient. Experienced distillers reduce this time to four or five, at the most seven hours.	
Annual production:	Limited quantities.	
Quality of oil:	The crude oil contains 68 to 75 per cent. cineol and no phellandrene.	
Color:	The crude oil obtained directly from the stills is almost water white.	
Odor:	Typical of cineol oils. The presence of 3 to 4 per cent. citral gives it a fresh, lemon-like note.	
Use:	An excellent oil for pharmaceutical and medicinal preparations.	
Constants (according to Penfold)	Specific Gravity at 15° C.	0.917 to 0.922
	Optical Rotation	Up to +4°
	Refractive Index at 20° C.	1.4609 to 1.4640
	Cineol Content	68 to 75%
	Phellandrene	Not present.

1. "The Occurrence of a Number of Varieties of *E. dives* as Determined by Chemical Analysis of the Essential Oil," *Journal and Proceedings of the Royal Society of New South Wales*, Part I, Vol. LXI (1927), pp. 54 to 67; Part II, Vol. LXII (1928), pp. 72 to 78; Part III, Vol. LXIII (1929), pp. 79 to 84.

Congealing Point	– 12° to – 16°
Solubility	Soluble in 1.1 to 1.5 volumes of 70% alcohol.

Samples of genuine oils procured by the writer in Australia showed the following constants:

	Crude Oil	*Rectified Oil*
Specific Gravity at 25° C.	0.912	0.913
Optical Rotation	+ 2° 15′	+ 3° 33′
Refractive Index at 20° C.	1.4629	1.4619
Cineol Content	72.5%	75.6%
Solubility at 20° C.	Soluble in 2 to 2.5 volumes and more of 70% alcohol	Soluble in 2 to 2.5 volumes of 70% alcohol; opalescent with more.
Phellandrene Test	Negative.	Negative

Constituents: Cineol; up to 6 per cent. piperitone; terpineol both free and in ester form; geraniol; 1-α-phellandrene (mostly absent or present only in very small quantity); a sesquiterpene; citral.

TECHNICAL OILS

EUCALYPTUS DIVES, TYPE

Vernacular name of the plant: Broad-leaf peppermint.

Occurrence: Very abundant in the Braidwood district of New South Wales; common throughout the coastal ranges of New South Wales and Victoria, especially northeast Victoria.

Yield of oil: Two to 4 per cent.; usually 3 per cent. Yield varies according to season, locality and so forth.

Annual production: Very large quantities.

Quality: Because of its chemical composition (40 to 50 per cent. piperitone and 40 per cent. phellandrene), a very useful oil for technical purposes.

Color: Yellowish.

Odor: Typical of piperitone and phellandrene; recalls oil of peppermint.

Rectification: Because there exists a much greater demand for piperitone than for phellandrene, a rectified oil of *E. dives* Type was introduced more than ten years ago. This oil is reddish brown and contains about 85 per cent. piperitone. A. R. Penfold[1] advises those distillers who bring over the whole of their oil in eight hours to collect separately the first three-hour portion, which is richer in phellandrene, and reserve the remaining five-hour distillate which will contain up to 70 per cent. piperitone.

Uses: Because of its solvent properties, the oil is used in many proprietary liquids. Large quantities are employed in Australia for separating metallic sulfides by ore flotation. Phellandrene, isolated and purified, is used for the scenting of soaps. Piperitone, another main constituent, can be converted into thymol (oxidation with ferric chloride) and menthol (simple hydrogenation with hydrogen gas under certain conditions), two of the most valuable ingredients in disinfectants and dental preparations.

Constants of the crude (complete) oil (according to Penfold):

Specific Gravity at 15°C.	0.8892 to 0.9063
Optical Rotation	– 58° to – 78°
Refractive Index at 20° C.	1.4784 to 1.4806
Piperitone	40 to 53%
Flash Point (closed cup)	60° C.

The length of distillation has considerable influence upon the specific gravity and optical rotation of the oil. According to the type of still used, the distillers in the Braidwood district distill from six to eight and even up to twelve hours, obtaining oils which vary between the following limits:

Specific Gravity at 15° C.	0.8960 to 0.9062
Optical Rotation	– 42° to – 63°
Refractive Index at 20° C.	1.4769 to 1.4814
Piperitone	40 to 45%

Samples of genuine oils procured by the writer in Australia had the following constants:

	a	*b*
Specific Gravity at 15° C.	0.896	0.899
Optical Rotation	– 61° 30′	– 58° 50′
Refractive Index at 20° C.	1.4810	1.4813

1. "Guide to the Extraction of Eucalyptus Oil in the Field," Bulletin 4, Technological Museum, Sydney, page 23.

Piperitone Content (sodium sulfite method):	44%	46%
Phellandrene Test	Strongly positive	Strongly positive.
Solubility at 20° C.	Turbid in 6 volumes and more of 80% alcohol; soluble in 0.5 volumes and more of 90% alcohol.	Slightly opalescent in 1.5 volumes of 80% alcohol, cloudy with more.

Constituents: Forty to 50 per cent. piperitone; about 40 per cent. l-α-phellandrene; camphene; dipentene; γ-terpinene; terpineol-4; n-valeric aldehyde; p-cymene; α-terpineol; alcohols; sesquiterpenes.

A. J. Birch[1] isolated large quantities of origanene which chemical has a bicyclic structure and the empirical formula probably of C_9H_{14}.

EUCALYPTUS DIVES VAR. "A"

Vernacular name of the plant: Broad-leaf peppermint.

Occurrence: It grows over wide areas in many parts of Victoria but only sparsely in New South Wales.

Annual production: Moderate.

Quality: The oil contains only 5 to 15 per cent. of piperitone and, therefore, cannot be used for the manufacture of synthetic menthol or thymol.

Use: For industrial purposes—mineral flotation, and as a general solvent.

Constants (according to Penfold): Specific Gravity at 15° C.	0.8630 to 0.8772
Optical Rotation	−44° to −66°
Refractive Index at 20° C.	1.4739 to 1.4792

A sample of genuine oil procured by the writer in Australia had the following constants:

Specific gravity at 15° C.	0.861
Optical Rotation	−52° 24′
Refractive Index at 20° C.	1.4800
Piperitone Content (sodium sulfite method)	2%
Phellandrene Test	Strongly positive.
Cineol Content	
Solubility at 20° C.	Turbid in 10 volumes of 90% alcohol.

Constituents: Sixty to 80 per cent. phellandrene; 5 to 15 per cent. piperitone; the remainder of the oil consists mostly of piperitol.

EUCALYPTUS PHELLANDRA, LATE AMYGDALINA

According to Penfold and Morrison[2] the oil of this plant is identical with that of *E. Australiana* var. *"B."*

Vernacular name of the plant: The well-known narrow leaf peppermint.

Occurrence: *It grows extensively on the mountain ranges of* New South Wales and Victoria, especially in the southern coast districts.

Yield of oil: Three to 4.5 per cent.

Length of distillation: Six to eight hours; experienced distillers are able to shorten distillation to three or four hours.

Annual production: Large quantities.

Quality: The crude oil contains from 35 to 50 per cent. of cineol and about 40 per cent. of phellandrene.

Color: Pale color, sometimes almost water white.

Odor: Typical of phellandrene and cineol.

Rectification: The oil fractions coming over during the first and second hour are usually kept separately and marketed for different purposes.

Use: The presence of such a high percentage of phellandrene precludes the use of the crude oil for medicinal purposes. However, the first hour oil, which is richer in cineol, is sometimes admixed with pharmaceutical oils. The second hour oil and the crude oil are most useful for technical purposes. They are employed for mineral flotation, in disinfectants, shoe polishes, as solvents, paint removers, fruit sprays and so forth.

1. *Journal and Proceedings of the Royal Society of New South Wales*, Vol. LXXI (1938), 330.

2. "The Essential Oil of *E. Australiana* (Baker and Smith) and Its Physiological Forms," *Journal and Proceedings of the Royal Society of New South Wales*, Part I, Vol. LXIX (1935), 111 to 122, and Part II, Vol. LXXI (1938), 357 to 361.

Constants (according to Penfold):

The crude (complete) oil varies between the following limits:

Specific Gravity at 15° C.	0.902 to 0.905
Optical Rotation	– 12° to – 20°
Refractive Index at 20° C.	1.4660 to 1.4695
Cineol Content	20 to 35%

The first and second hour oils range between the following limits:

	First hour oil	*Second hour oil*
Specific Gravity at 15° C.	0.900 to 0.907	0.903 to 0.906
Optical Rotation	– 12° to – 20°	– 15° to – 25°
Refractive Index at 20° C.	1.466 to 1.469	1.470 to 1.472
Cineol Content	30 to 50%	20 to 30%
Solubility in 70% alcohol	Soluble in 1.2 volumes.	Soluble in 1.5 volumes.

Samples of genuine oils procured by the writer in Australia had the following constants:

Specific Gravity at 15° C.	0.900	0.915
Optical Rotation	– 18° 40′	– 4° 50′
Refractive Index at 20° C.	1.4716	1.4717
Cineol Content	38.6%	49.0%
Phellandrene Test	Strongly positive.	Positive.
Solubility at 20° C.	Slightly opalescent in 1.5 volumes of 80% alcohol, cloudy in more. Not clearly soluble in 70% alcohol.	Soluble in 1 volume of 80% alcohol. Turbid in 3.5 volumes and more.
Remarks:	The properties of the second sample are somewhat different from those given by Penfold.	

Constituents: Phellandrene; cineol; pinene; terpineol and esters; geraniol and esters; sesquiterpenes.

EUCALYPTUS RADIATA (NUMEROSA)

Penfold and Morrison[1] showed that *E. radiata* occurs in three different physiological forms, the oils of which have an entirely different chemical composition.

	Type	*Var. "A"*	*Var. "B"*
Specific Gravity at 15° C.	0.876 to 0.894	0.901 to 0.905	0.901 to 0.904
Optical Rotation	–32° to – 41°	– 46° to – 65°	– 40° to – 42°
Refractive Index at 20° C.	1.477 to 1.479	1.479 to 1.482	1.4740
Piperitone	5 to 10%	50%	20 to 30%
Piperitol	Present		Present
Cineol			12 to 15%
Phellandrene	60 to 80%	40%	40%

The oil of *E. radiata* var. "*A*" is very similar to that of *E. dives* Type and could be used in its place should the demand for eucalyptus oils with a high piperitone content warrant its production on a large scale. The seeds of *E. radiata* var. "*A*" have greater virility than those of any other known eucalyptus species. There exists at present only a limited demand for oils with such low piperitone content (about 5 per cent.) as represented by *E. radiata* Type.

EUCALYPTUS RADIATA (NUMEROSA) TYPE

Vernacular name of the plant:	White-top or river-white gum.	
Occurrence:	Plentiful on the river banks and swampy sections of the New South Wales mountain ranges, especially in the south.	
Yield of oil:	From 2.3 to 3 per cent.	
Annual Production:	Rather limited quantities.	
Quality:	It contains a higher percentage of phellandrene than any other species.	
Color:	Yellow.	
Odor:	Pleasant and characteristic because of the presence of the alcohol, piperitol.	
Use:	To a limited extent in mineral flotation and in disinfectants.	
Constants (according to Penfold:)	Specific Gravity at 15° C.	0.8904 to 0.8948
	Optical Rotation	– 25° to – 35°

1. "The Occurrence of a Number of Varieties of *E. radiata* (*E. numerosa*) as Determined by Chemical Analysis of the Essential Oils," *Journal and Proceedings of the Royal Society of New South Wales*, Part I, Vol. LXVI (1932), pp. 181 to 193; and Part II, Vol. LXX (1937), pp. 375 to 377.

Refractive Index at 20° C.	1.4775 to 1.4786
Cineol Content	Only traces.
Phellandrene	Present in abundance.
Piperitone	About 5%.
Ester Number	After 1½ hours of hot saponification 16 to 19
Ester Number after Acetylation	66 to 94.
Solubility	Soluble in 10 volumes of 70% alcohol.

In several localities and at certain periods of the year, oils of very low piperitol content have been distilled; they varied between the following limits:[1]

Specific Gravity at 15° C.	0.8643 to 0.8865
Optical Rotation	−50.36° to −59.75°
Refractive Index at 20° C.	1.4762 to 1.4777
Solubility	Insoluble in 10 volumes of 80% alcohol.

Constituents: Phellandrene, as main constituent; furthermore, piperitol; about 5 per cent. piperitone; very little cineol and pinene; esters; and sesquiterpenes. According to a recent investigation of Penfold and Morrison[2] the oil contains 70 to 80 per cent. phellandrene, 15 to 25 per cent. piperitol and less than 5 per cent. piperitone.

PERFUMERY OILS

EUCALYPTUS CITRIODORA

Vernacular name of the plant: The lemon-scented gum tree.

Occurrence: The native habitat of this smooth-barked tree is in the Mount Morgan district (north coast) of Queensland, but the plant is also extensively cultivated as an ornamental tree in various parts of New South Wales and Victoria, especially in the western suburbs of Sydney. The oil is distilled on a commercial scale at Gladstone, Mount Morgan and Cairns in Queensland. Recently it has also been produced in eastern Java, not far from Sourabaya, as well as in Guatemala.

Yield of oil: The leaves and terminal branchlets of wild-growing trees yield about 0.57 per cent., but those of cultivated trees 1 to 1.6 per cent. oil. The trees grow to great height and, therefore, collection of the leaves is difficult. However, if cultivated and repeatedly cut, the cost could be substantially reduced.

Annual production: So far it has been very small because of the competition from Java citronella oil.

Quality: This oil is quite different from all other eucalyptus oils because it contains citronellal as main constituent.

Color: Water white to yellowish.

Odor: Pronounced citronella-lemon like.

Use: An interesting perfumery oil useful for scenting soaps and also for manufacturing important aromatics such as citronellol, esters, hydroxy-citronellal and so forth.

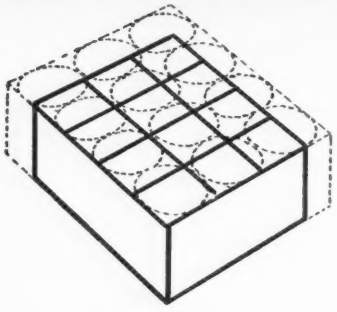
Constants of the Australian oils (according to Penfold):

Specific Gravity at 15° C.	0.8658 to 0.8740; it increases considerably with aging of the oil.
Optical Rotation	−0.2° to +1.5°
Refractive Index at 20° C.	1.4521 to 1.4563
Content of Citronellal	70 to 85% (According to Pfau[3] determination of citronellal with bisulfite solution in the presence of geraniol and other terpene alcohols gives too high values and, therefore, the actual citronellal content of *E. citriodora* oil is probably lower.)

1. A. R. Penfold "Commercial Eucalyptus Oils," Sydney, 1933.
2. "Recent Studies in Eucalyptus Oils," *Australasian Journal of Pharmacy*, n. s., v. 20, Jan. 30, 1939, pp. 34 to 35.
3. *Perfumery & Essential Oil Record* 16 (1925), 183.

(To be concluded next month)

KEEP THE GOOD IN...



SAVE SPACE!

Rectangular cartons save ⅓ the space in shipping and storage...It's the practical shape for modern conditions.

IN *every* way packaging is reaching into new fields—seeking substitutes, speeding production, making the most of non-critical materials. It's in this effort that Ridgelo research is bringing new products to folding cartons, old packages in to new protective designs.

Ridgelo materials include grease resistant coatings—water protective finishes, laminations using papers, parchment, glassines and cellophane for moisture-vapor resistance and grease protection.

Perhaps your problem fits our broadened production facilities. Let's get together and find out.

Ridgelo
CLAY COATED
BOXBOARDS · CARDBOARDS
MADE AT RIDGEFIELD, N. J., BY LOWE PAPER COMPANY

Representatives: E. C. Collins, Baltimore • Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles A. E. Kellogg, St. Louis • Philip Rudolph & Son, Inc., Philadelphia

MERCHANDISING NEWS and PACKAGING NOTES

THE COSMETIC TREND: Department store executives faced by the prospect of declining sales in departments where priorities are cutting down the supply of salable merchandise, are making an all-over study of the war time potentialities of their organizations to discover whether departments hit by this development, can be made to gain new blood by the addition of merchandise "borrowed" from other departments or whether other departments can be expanded to make up for the loss of those where declines seem probable. Toilet goods departments and individual toilet goods and cosmetic items enter into this study prominently because they have been comparatively little affected by war-time restrictions and also because of the comparatively wide range of utility of the average cosmetic.

Whether cosmetics will serve the purpose in this case; in other words whether the cosmetic industry can grow through the war in spite of the recent cut in its productive capacity, seems to depend very much upon its ability to overcome the raw material shortages that are at the bottom of the restrictions to which it now must conform. Here are a few questions that must be answered. Can cosmetic manufacturers make products, if necessary on the borderline of cosmetic use, that can serve as fill-ins in other departments? Examples are stop-run preparations to preserve hosiery, deodorizers for cabinets and new hand preparations for kitchen use. Can the cosmetic industry (by the introduction of new non-restricted materials) bring merchandise, of cosmetic use, upon the counters in quantities exceeding the present ordered limits? Can the cosmetic industry by one means or another break away from the conventional idea of a cosmetic and give the counters something entirely new, some article that would not suggest itself to manufacturers in other lines but may readily come to the mind of a cosmetic chemist because of his special training and mode of thinking? There is no doubt that somewhere along one of these lines is the germ of a real trend in cosmetic development.

In the meantime cosmetic buyers are looking over supplementary lines that promise further growth or which may find display other than at cosmetic counters. Among these articles are danglers for use in closets, pot pourries which can be sold also in the furniture and gift departments, sachets for linen drawers making good sellers —also at notion departments, new methods of packaging that give the container double utility with the prospect of making sales for the containers' sake.

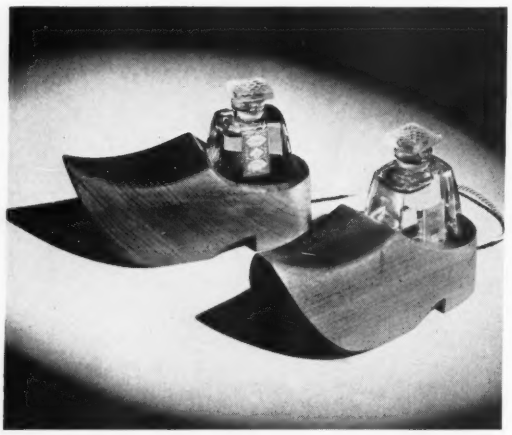
As was to be expected there are but few novelties in the market. Manufacturers and buyers are sitting on the fence and prefer to wait for a sign from WPB. Naturally buyers are less concerned about the technicalities of the situation and more about its effects upon the available volume of merchandise.

BETTER BUY BONDS: Although they don't come right out and say so there are altogether too many cosmetic advertisements which intimate and suggest that the way to win the war is to buy cosmetics. Now although this is a very nice and very pleasant way of winning a war we don't believe it will ever replace that nobler and more realistic formula of "blood and sweat and tears." Although we don't relish the prospect of being put out of business any more than the next fellow, we consider this advertising line to be downright nauseating and disgusting and an open invitation to anyone with the authority to pin back the ears of the entire industry as the only means of teaching a selfish few a lesson.

It is, therefore, with considerable relief that we turn to the Germaine Monteil ad which, in advertising the Germaine Monteil lipstick says:

"It won't build morale. That's built of sterner stuff. It won't help a fighting man. His courage is his own. It won't help preserve our way of life. We've got to work and fight for that. All Monteil's fine lipstick will do is to make you look prettier. If it's victory you want—and that's what we all want—Better Buy Bonds."

DEFY TREND: Somewhat contrary to the general feeling that novelty packaging, especially in the higher price brackets, is a thing of the past, Coty's Christmas line again includes an interesting lot of novelty packagings ranging in price from $5.00 to $12.50. This year they appear to be gayer, albeit patriotically non-priority. In the $5.00 group Coty offers Sabots, an intriguing pair of miniature wooden shoes, each holding a bottle of Coty perfume, and the Guard of Honor, for the lady whose heart is in the service—a twin set of two scents on a wooden base before a tricolor mirror surmounted by the United States



shield. The Garden Cart, gay as the flamboyantly painted carts of the Cyprian peasants, and useful as a cigarette holder, retails for $7.50. The Toboggan, a tiny toboggan in wood holding four fat little flacons of Coty fragrances retails at $10. At $12.50 there is the Jewel Tree, a colored crystal tree amid whose leaves and fruit nestle five flacons of perfume. The base is wood, and the tree can remain for years as an ornament. To encase the handsome Lalique-topped bottles of the six great names in Coty perfumes, there is a huge lacquer plastic "fleur du lac" on a colored mirror disc. L'Aimant, Emeraude, Paris, Chypre, Styx and L'Origan may be had in this presentation at $12.50 each.

Six well styled and well thought out non-priority novelty packages which defy the trend!

BRITISH COSMETIC CONTROL: Although we have emphasized repeatedly that there is no similarity with respect to the British position and ours on cosmetics, due chiefly to the fact that Britain has to import the materials for cosmetic manufacture while we do not, besides having a labor and plant space problem, still it is interesting and enlightening to study the discussion which is now proceeding in Great Britain with respect to further cosmetic controls.

"While women are wondering what new blow the war will deal to their supplies of cosmetics, a battle is going on about them—between men. The Board of Trade want to standardize beauty preparations. The manufacturers object. The women—they must wait and see.

"The idea of the Board of Trade is that lipsticks, powder, and rouge shall be sold in one quality and in two shades only, according to 'Soap, Perfumery and Cosmetics.'

"Lipsticks would be either light or dark red—there would be no more orange, fuchsia, or cyclamen shades. Powder, instead of being available in a range of eight or more shades, would be obtainable only in rachel (deep cream), natural (pale pink). Rouge would follow the tones of the lipsticks.

"By confining cosmetics to two ranges the Board of Trade say they will save labor and also ensure that all cosmetics on the market are maintained at the highest quality. . . .

"The manufacturers say that if the Board of Trade standardize cosmetics they must also supply manufacturers with raw materials, for no maker will divulge his own secret formula.

"The possibility of rationing face powder and lipsticks and cutting out all unnecessary make-up is now being considered by an advisory committee of four set up by the Board of Trade. Pool powder is also being discussed.

"In spite of the fact that registered manufacturers are allowed to sell only 25 per cent. of normal supplies, the sale of cosmetics and toilet articles for both men and women has soared by over 100 per cent.

"This is due in part to the Black Market and also to the fact that chemists are allowed to make £40 worth per month of cosmetics and toilet articles themselves.

"Women may have to use 'standard' lipsticks, facepowders and other beauty preparations in the future.

"The Board of Trade have now turned their attention to cosmetics, and have appointed an advisory committee, drawn from members of the trade, to go into the question of production and distribution.

"It is now suggested that the Board intend to sponsor a scheme of "utility cosmetics" to economize in manpower and production.

"The Board have already considered a scheme for price-controlling beauty preparations.

"But there are many difficulties. For example, if lipsticks are not to be sold above 2s. 6d. it means that the more expensive brands will have to be sold in much smaller sizes.

"One of the snags here is that it is practically impossible to get new containers in different sizes.

"Another official suggestion was the concentration of factories. This would be impracticable, as each manufacturer makes his preparations to different formulae."

"In wartime, it is obviously not so much a matter of accepting sacrifices as of ensuring that all sacrifices are equitably apportioned. Manufacturers who still endeavor to live in the past are in for a rude awakening. Some definite attempt in the direction of rationalization

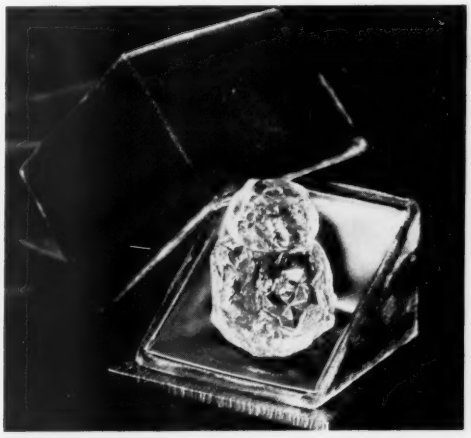
has become essential. Unfortunately the trade is not one but many, and a Square Deal for all is difficult enough to formulate, much less put into practice. It will be extremely interesting to see what the Board of Trade, together with its present Advisory Committee, makes of it all."

NEW PERFUMES: The stream of perfume presentations, somewhat narrowed these days, nevertheless continues. Fall and holiday merchandise never fails to include a new fragrance here and there. Among them this month is the new Bourjois perfume, Courage. Bourjois calls it simply "a fragrance attuned to the times." Audacity is carried into the very packaging of Courage, in the broad, free strokes of red and gold, and the daring script signature whose vivid blue is echoed in the tall glass stopper that tops each handsome bottle. Courage, which goes on sale October 2, comes in four sizes ranging from $1.00 to $6.50, and also in one size of concentrated cologne at $2.50. Package design by Leonard.

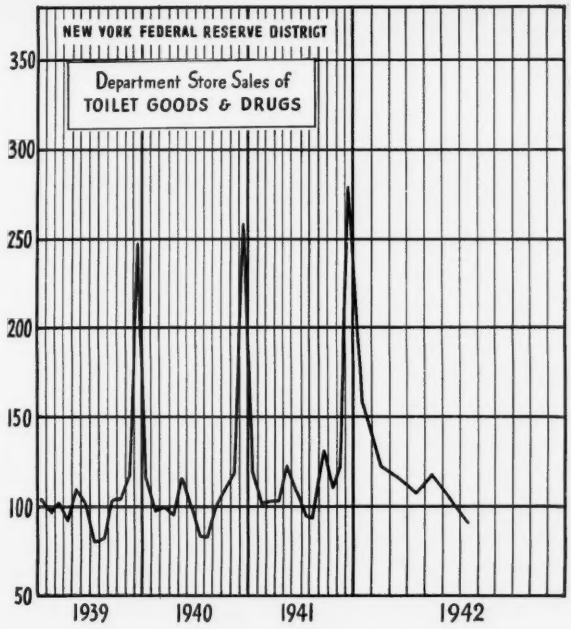
The romantic influence of the tropics inspired Lucien Lelong's new perfume, Sirocco. Set in a serpentine flacon which attracts light, Sirocco will make a handsome addition to any dressing table. The package itself is of stark white simplicity, bound at either end with a rope-like design. Sirocco will also be available in three forms of cologne, the regular alcohol cologne, cream cologne, and in the big stick of solid cologne.

Parfums Massenet, a newcomer to the American market, presents Altesse de Massenet, in a jewel-like package. Altesse comes in one size only $17.50. Triple Cologne in the same fragrance also comes in one size, six ounce, at $6.50.

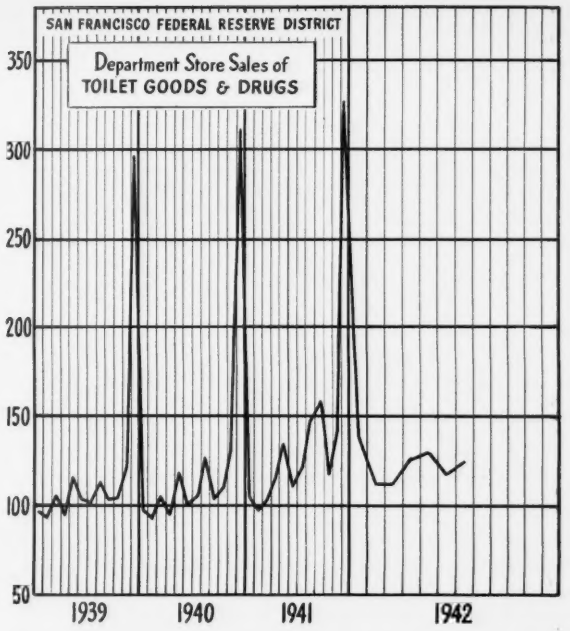
PLAYING CUPID: Pond's plays cupid with its newly introduced soldier's kit that should be welcomed by every soldier, sailor and marine. The little kit is all set to mail and contains a message that's classic in its simplicity: "Keep Your 'Lips' for Me." This certainly offers possibilities, especially when a service man might be tempted to send kits to more than one girl. Besides the message, the girl gets a Pond's "Lips" in her favorite shade. Gift and message retail for 50 cents. Pretty small price to pay for keeping a gal interested when he's miles away.



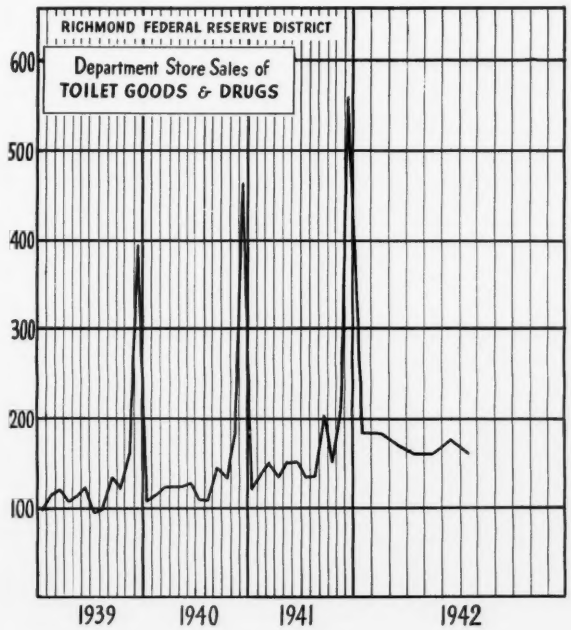
PLASKON
for Personality
Plaskon Molded Color will help give your product individuality... will enhance eye appeal and attract more buyers. Plaskon is beautiful, chemically inert, odorless, tasteless, resistant to solvents. We offer an advisory service based on long experience in the drug and cosmetic industry.
Plaskon Company, Inc.,
2110 Sylvan Ave., Toledo, Ohio.
PLASKON
• MOLDED COLOR •



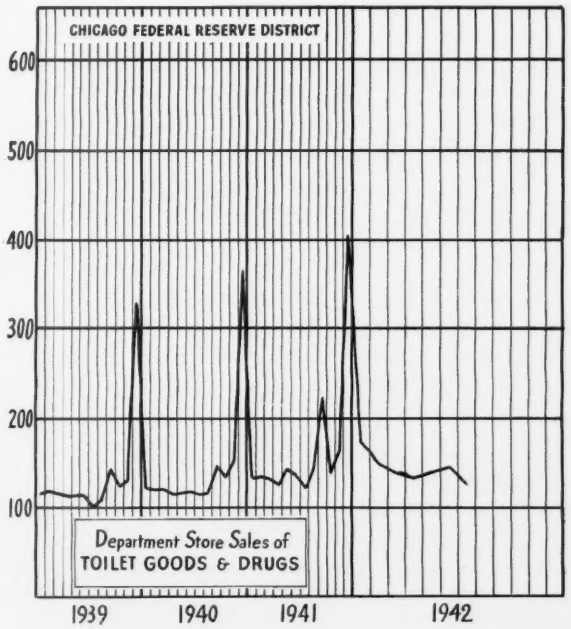
Sales of toilet articles and drug sundries by department stores in the New York Federal Reserve District were 4 per cent. less in July 1942 than in the same month of the preceding year. This corresponds to unadjusted index numbers of 91.0 for July 1942, 102.4 for June 1942, and 94.8 for July 1941.



Sales of toilet goods and drug sundries by department stores in the San Francisco Federal Reserve District were 3 per cent. greater in July 1942 than in July 1941. This corresponds to unadjusted index numbers of 124.8 for July 1942, 117.6 for June 1942, and 121.2 for July 1941.



Sales of toilet articles and drug sundries by department stores in the Richmond Federal Reserve District were 19 per cent. greater in July 1942 than in the same month of 1941. This corresponds to unadjusted index numbers of 160.5 for July 1942, 175.5 for June 1942, and 134.9 for July 1941.



Sales of toilet articles and drug sundries by department stores in the Chicago Federal Reserve District were 4 per cent. greater in July 1942 than in the same month of 1941. This corresponds to unadjusted index numbers of 125.8 for July 1942, 143.4 for June 1942, and 121.0 for July 1941.

SMART PACKAGING MADE INEXPENSIVE WITH *Swindell* STOCK *Bottles*

No delays, no "priority troubles," no investments in private moulds—when you choose one of Swindell's smartly designed stock bottles! Here are seven beauties:

J-32: ½ oz. to 16 oz. N-30: ⅛ oz. to 8 oz.
D-62: ½ dr. to 8 oz. A-273: ¼ oz. to 16 oz.
C-39: ½ oz. to 16 oz. A-682: ⅛ oz. to 4 oz.
A-539: ½ oz. to 32 oz.

SWINDELL BROS.
BALTIMORE, MARYLAND
200 FIFTH AVENUE, NEW YORK
ROBERTO ORTIZ—HAVANA, CUBA

When you think of bottles think of

Swindell

SHULTON

In keeping with the sentiment of Christmas, Shulton has created the Friendship's Garden remembrance box, filled with floral-scented toiletries. The pastel decorated box is an adaptation of a trunk box which held feminine fripperies in the early days of the deep south. Nested in pink cut-paper inside the box are a bottle of Friendship's Garden toilet water with pink atomizer to match; a bottle of powder sachet; two tablets of sachet, and a cake of toilet soap. The box itself will hold handkerchiefs or hair bows long after the contents are gone.

SHULTON

DAGGETT & RAMSDELL

"Creams for Beauty" is the name of Daggett & Ramsdell's charming new package containing aids to complexion care—Golden cleansing cream and perfect night cream presented in a daintily feminine and colorful fashion. Desirable for gift giving as well as for personal use.

DAGGETT & RAMSDELL

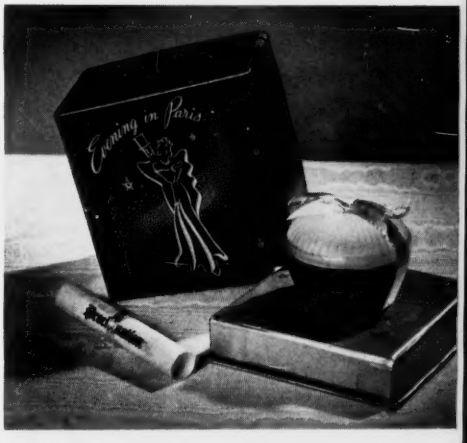
DOROTHY GRAY

Dorothy Gray's South American bath set in a gay bath box consists of cologne (4 ounces), dusting powder and 5 cakes of novelty-molded soap. Seven pieces in all, suggesting a medley as bright and vivid as a South American Fiesta.

DOROTHY GRAY

BOURJOIS

Bourjois "Evening in Paris" Creme-Parfum is somewhat of an innovation in the perfume field. A snowy white vanishing type cream is substituted for alcohol as a carrier for Evening in Paris perfume. The package itself is reminiscent of Evening in Paris packages in color and design.



BOURJOIS

STUART-CHASE CO.

Faintex, an ammonia inhalant, has been introduced by the Stuart-Chase Co. Faintex comes in convenient form so that it may be carried in the purse or vest pocket with no possibility of spilling. It is easy to use as it may be crushed with a slight pressure of the fingers.

10 UNITS
FAINTEX
Trade Mark Reg. U. S. Pat. Off.
For Use as Smelling Salts
DIRECTIONS-Crush FAINTEX between the fingers without removing braided cover, hold to nostril and inhale.
MANUFACTURED BY
STUART-CHASE CO.
NORTH BERGEN, N. J.

STUART-CHASE CO.

CHARLES OF THE RITZ

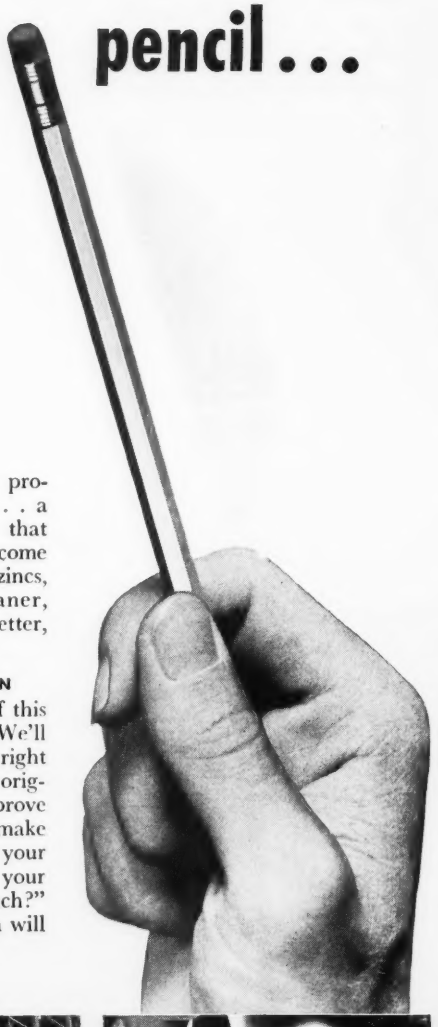
Charles of the Ritz Moss Rose Christmas favorites include the Moss Rose sachet mottoes, sachets decorated with Victorian sayings in a looseleaf book; the Mandolin, which this year contains a luxurious supply of bath powder; combination bath duet, a box of dusting powder and Moss Rose soap bowed together with pink ribbon, and the Cornucopia, a gift abounding with Moss Rose beautifiers—soap, dusting powder, rouge compact and lipstick.

CHARLES OF THE RITZ

CARTON BUYERS! underline this with a sharp pencil...

★ **COATED LITHWITE ACTUALLY COSTS LESS THAN SOME UNCOATED BOARDS**

★ **REVOLUTIONARY NEW BOARD MAY SHOW YOU WAY TO IMPROVED CARTON APPEARANCE, LOWER PACKAGING COSTS AT THE SAME TIME**



YOU BET THAT'S SOMETHING to underline with a sharp pencil, today . . . *with the same sharp pencil* you're using right now to go over costs all along the line.

For *Coated* Lithwite is the revolutionary new boxboard that's shown hundreds of carton buyers how to step down costs and step up appearance . . . a finer, whiter, quality *coated* board that costs no more than many uncoated boards, actually costs less than some.

Hard to believe? Then listen. *Coated* Lithwite is made by an entirely new process. It is actually formed, made, coated on one machine . . in one continuous operation.

And the same revolutionary process that produces *Coated* Lithwite with such amazing economy actually produces a finer, whiter board . . . a smoother more velvety surface that makes inks lay more smoothly, come up with greater brilliance. Type, zincs, halftones print crisper, cleaner, sharper. *Coated* Lithwite seals better, too, scores without cracking.

TRY THIS DESK-TOP COMPARISON

WRITE TODAY for sample sheets of this sensational, new coated board. We'll send you plain sheets, and sheets right off our presses. Or send us your original carton engravings, let us prove them on *Coated* Lithwite. Then make a side-by-side comparison with your present cartons. We feel sure your next question will be, "How much?" . and we believe our quotation will also amaze you.

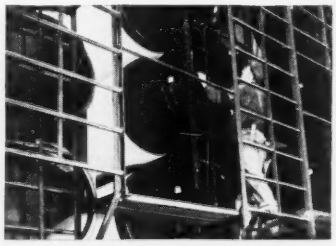
WHAT'S YOUR PROBLEM?

★ **Finding a substitute for tin, metal or glass?**

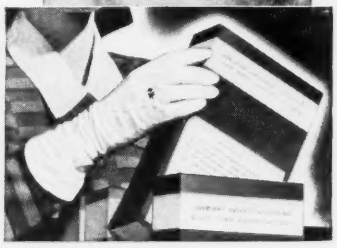
★ **Packaging dehydrated or frozen foods?**

★ **Cutting packaging costs or improving display?**

Put it up to the Gardner-Richardson technical staff. We either have the answer or we'll burn our lights at night 'til we get it. Write today, outlining your problem in full. Better still, wire or phone and ask a Gardner-Richardson representative to call and talk it over



GREATEST FORWARD STEP in boxboard making in 50 years. A machine that brings together coated board *quality* and uncoated board economy for the first time. It forms, makes, coats Coated Lithwite in one continuous operation.



TODAY, FEWER WOMEN ARE ASKING . . . but more women are reaching for the merchandise they buy. The brilliant, cleaner-looking package you get with Coated Lithwite can guide extra hands to your product.

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard • Middletown, O.

Sales Representatives in Principal Cities: PHILADELPHIA, CLEVELAND, CHICAGO, ST. LOUIS, NEW YORK, BOSTON, PITTSBURGH, DETROIT.

HARRIET HUBBARD AYER

A luxurious ensemble of Harriet Hubbard Ayer's popular Yu fragrance consists of toilet water, bath powder, and sachet in rayon-satin bag.

HARRIET HUBBARD AYER

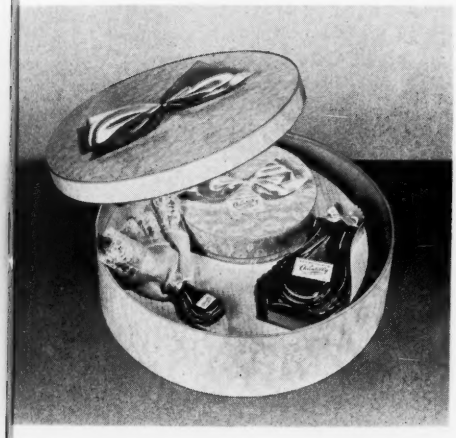
OLD SOUTH PERFUMERS

Old South Perfumers offer a beautiful old fashioned rose jar which is appropriately called the "Natchez Rose Jar," since it is a copy of an old Dresden china container found in Natchez, Mississippi. It is filled with perfumed rose buds to be used for sachet. On sale October 1.

OLD SOUTH PERFUMERS

HOUBIGANT

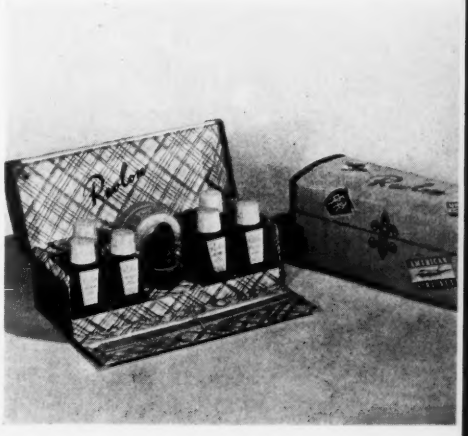
Houbigant introduces luxurious sets in the popular Chantilly perfume series, pink ribbons and lace being the motif. The band box illustrated contains Chantilly perfume, eau de toilette, deluxe dusting powder and dainty Chantilly type handkerchief.



HOUBIGANT

REVLON

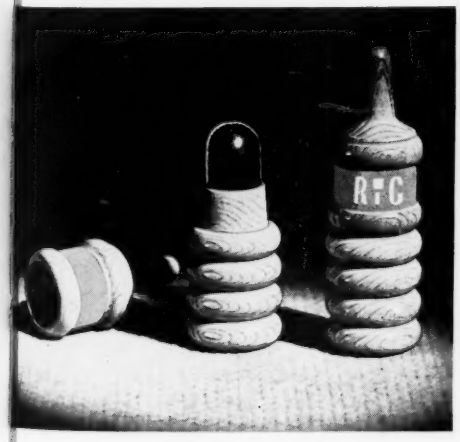
Revlon's hand trousseau trunk is a lovely "homework" hand trunk cleverly made of straw fabric with red plaid paper lining. It comes in natural with red trim, and contains Revlon polish in two shades, Adheron, cuticle remover, oily remover, lipstick, Cheek Stick, nail cream, emery boards, and orangewood stick.



REVLON

RIC PRODUCTS, INC.

The Ric perfume stick offered by Ric Products, Inc., is enclosed in a chic case about the size of a regular lipstick. This novel solid perfume rests easily within the handbag. Because it is a solid perfume it will not spill. It comes in twelve fragrances ranging from exciting, mystifying blends that bespeak the sophisticate, to the subdued sweetness of bouquets.



RIC PRODUCTS, INC.

TANGEE

Among the deluxe numbers in the Tangee gift set line this year is the set illustrated, known as the Tangee "Beauty on Duty." The case is genuine leather and is furnished in service blue and black colors. It holds lipstick, loose powder compact, rouge vanity and a comb. There is also a special compartment for a package of the user's favorite cigarettes, as well as a change purse.

TANGEE

NEWS

War Effort

Essential Oil Salvage

Essential oil, aromatic chemical, and vegetable oil producers and dealers, as well as producers of flavors in Greater New York area were organized to participate in the work of the Industrial Salvage Section of the Conservation Division of the War Production Board at a luncheon meeting held September 2 at Hotel Pennsylvania, New York. About sixty were present. Frederick J. Lueders, of George Lueders & Co., presided and after saying a few words on the importance of scrap metals and rubber to the war effort, introduced Rolland J. Hamilton, secretary-treasurer of the American Radiator and Standard Sanitary Corp., who is acting as chairman of the industrial salvage committee for Greater New York. Mr. Hamilton further stressed the importance of the scrap drive to the war effort.

R. Merrill Decker, regional chief, Industrial Salvage Division, outlined the manner in which the collection of scrap is accomplished by a voluntary plan of cooperation between industry and government. Iron and steel scrap are being given particular emphasis at this time, he said, and also wanted are non-ferrous metals, rubber, manila rope, burlap, and commercial solvents.

The system by which the scrap is turned over for being returned to the production lines of the country is by the firms having scrap turning it over to a junk dealer and then notifying the committee in charge of the kind and amount of material sold or turned over and to whom it was delivered. The committee turns this information over to the WPB monthly. All junk dealers are licensed and must report to WPB monthly on all goods received during the period. The WPB controls the flow of this scrap to such plants as must have it for the war effort.

All manufacturers were strongly urged to go over their plants closely and to turn over to junk dealers every bit of the critical materials that are not being used to the greatest advantage. Failure of this voluntary method, it was indicated, would result in the government itself being forced to inspect all places of business and decide what must be given up to the scrap campaign.

Those present were urged to appoint "scrap executives" in their companies who would take charge of the collection of scrap material. It was advised that these "scrap executives" be a part of the management of the business with full authority to act.

Members of a committee to follow up the work and to call on all the members of the industry and have them appoint "scrap executives" within their companies are: F. A. Leonhardt, Fritzsche Brothers, Inc.; Harold L. Simons; J. B. Magnus, Magnus, Mabee, and Reynard; M. G. Couderchet, Naugatuck Aromatics; Dr. B. H. Smith, Virginia Dare Extract Co.; G. Lowenstein, Fred Fear & Co.; E. D. Stults, Welch, Holme & Clark; and P. G. Brown. F. J. Lueders is chairman of this committee and all reports on disposal will be forwarded to him.

Drug Industry Salvage in N. Y.

At a luncheon held at the Hotel Roosevelt, New York, August 5, the drug industry organized a committee to work under the Industrial Salvage Committee for Greater New York. John Glossinger, president of American Druggists' Syndicate, Inc., was named chairman of the group which also included: J. R. de Saxe, vice-president, American Druggists' Syndicate, Inc., vice-chairman; C. C. Caruso, vice-president, Schieffelin & Co.; John W. James, president of Towns & James; R. F. Spalding, general manager of Arlington Chemical Co.; E. B. Gallagher, general manager of Lederle Laboratories; M. Kiss, vice-president of Ex-Lax, Inc.; I. Danchig, president of Odmant Drug & Chemical Co.; L. A. Klein, vice-president of W. R. Warner Co.; J. V. Powers, general manager of E. Fougera & Co.; Lester Dick, vice-president of G. Stoddard Pharmaceuticals, and Joseph Bander, vice-president of Purepac Corp.

Cosmetic Salvage Committee

Cosmetic manufacturers have organized for a scrap drive at the request of the War Production Board, it was announced at a meeting in the Hotel Waldorf-Astoria on August 18. A Cosmetic Salvage Committee of the Industrial Salvage Committee for Greater New York has been formed under the chairmanship of Herman L. Brooks, president of Coty, Inc. Other speakers at the meeting included R. Merrill Decker, regional director of the Industrial Salvage Section of the WPB; Rolland J. Hamilton, secretary-treasurer of the American Radiator and Standard Sanitary Corp. and chairman of the Industrial Salvage Committee for Greater New York, and Major Thomas M. Phillips, liaison officer between the WPB and the Army Ordnance Corps for this area.

Colgate Gathers Scrap

In a thorough search of the plant in Jersey City, William Hulsizer, production supervisor of Colgate-Palmolive-Peet, designated obsolete machinery for contribution to the national drive for scrap. Three fifty-year-old printing presses, formerly used to print labels and wrappers, yielded ten tons of steel, brass and rubber scrap. Mr. Hulsizer, in addition to directing the scrap drive at Colgate, serves on his district salvage board.

Merck Gathers Scrap

Merck & Co., Inc., recovered 640,292 pounds of scrap iron, 5,199 pounds of scrap rubber and substantial quantities of waste copper, aluminum, brass and other strategic materials at their plants at Rahway, N. J.; Elkton, Va., and Philadelphia. The campaign was started on April 7. The collection has been supervised and conducted by employe committees.

Naugatuck 100% for Bonds

The employees of Naugatuck Aromatics, Division of United States Rubber Co. are participating 100 per cent. strong, in the War Savings Bonds Payroll Deduction Plan. A certificate to that effect has been received by the company from the Hon. Henry Morgenthau, Junior.

Grimm Heads Alcohol Unit

Richard H. Grimm of New York has been appointed chief of the Industrial Alcohols Unit of the Chemical Branch of W. P. B.

Mr. Grimm started his business career with the American Distilling Co., Pekin, Ill., of which he became president in 1923. In 1928 when the Company was merged with others into the American Commercial Alcohol Corp., he became president of the combined concern. He retired from active business in 1933 and has been in retirement since with the exception of a term as president of the Industrial Alcohol Institute in 1935.

In Services

Join Army Air Corps

The War Department has granted a commission as captain to Stephen A. Ogden and a first lieutenant's commission to Gordon A. Ogden, executive vice-president and vice-president, respectively, of Mary Dunhill, Inc., New York. They are now on active duty with the Army Air Corps. at Miami Beach. They are sons of Arnold L. Ogden, president of Mary Dunhill, Inc., and have been given leaves of absence for the duration of the war. Arthur Mainzer, hitherto vice-president, has been appointed executive vice-president.

Mundheim Joins Army

Marshall Mundheim, chief operating executive of Antoine and Lightfoot Schultz, has been commissioned a first lieutenant in the Army Air Corps and is now stationed at Miami, Fla. for a six week's course of officer's training.

Higbee of Enco—Army Captain

Donald Major Higbee, formerly manager of Enco Chemical Corp., New York, has been commissioned a captain in the Army Air Corp. and is in training at Miami Beach, Fla.

John J. Rusk, who was Mr. Higbee's first assistant, has enlisted in the Navy and is now on duty in the Intelligence Division in New York.

Russell Howe in Army

W. Russell Howe, import agent and broker in botanical drugs, was inducted into the United States Army at Camp Upton, August 28. Mr. Howe who established his own brokerage business in 1933 has been associated with the drug industry since 1919.

E. Dewitt Osborne, an importer and exporter of essential oils and chemicals who has shared his office for some time, will carry on Mr. Howe's business during his absence.

Brewer of Ciba Joins Navy

A. D. Brewer, advertising manager of Ciba Pharmaceutical Products, has been commissioned a lieutenant commander in the Navy. He was an ensign in the first World War and will now be in charge of lighter-than-air craft at Lakehurst, N. J.

Polk Joins Army

L. R. Polk, export manager of Northam Warren Corp., has been commissioned a first lieutenant in the Army Air Force. He had served as export manager of Northam Warren since 1937.

Polly Spofford Joins WAAC

Polly Spofford, assistant promotion manager of Lentheric, Inc., joined the WAAC's at Fort Des Moines, August 3.

Fritzsche Men in Service

Charles C. Bryan, a well-known figure in the perfume industry, is the latest employee of Fritzsche Brothers, Inc., to join the nation's armed forces. Mr. Bryan has been commissioned a lieutenant in the Air Corps and has left for the indoctrination school at Miami, Fla. He is the thirty-fourth of the firm's employees to enter the services. Vernon Hill, a member of the company's sales staff of Philadelphia, has enlisted in the Coast Guard and has received a rating of Pharmacist's Mate, 3rd Grade.

The sons of two of the firm's executives have also entered the services. Lieutenant Frederick H. Leonhardt, Jr., only son of Mr. Leonhardt Sr., president of Fritzsche Brothers, Inc., is in

LT. F. H. LEONHARDT, JR.

training at Camp Carson, Colorado, with the 823rd Tank Destroyer Battalion, while the two sons of John H. Montgomery, secretary, are in the Air Corps. Robert W. Montgomery, is an aviation cadet in the United States Naval Reserve at Jacksonville, Fla., and expects to be commissioned within a month or so, while John H. Montgomery, Jr., is in the United States Air Corps at Tyndall Field, Panama City, Fla.

Dr. Bestwick Joins Army

Dr. H. G. Bestwick who has been special representative for the National Drug Co. in Washington for the last three years, has been commissioned a captain in the Sanitary Corps of the U. S. Army. He will be stationed at St. Louis.

- More Uniform Particle Size
- Perfect Color Distribution
- Non-powdery Appearance
- Stays On
- Over 100 Shades Available

Kolmar's Face Powder meets the most exacting standards of the industry. Because it is produced by the original hi-air pressure method, it is uniformly superior.

We will be pleased to send samples to you for laboratory tests.

Available in bulk, or packaged to your needs. Write today for samples and quotations on your individual requirements.

Representatives:

Mr. M. C. Boyd, Quinby Building, Newark. N. J.
Mr. Douglas Haggerty, 122 E. 42nd St., New York City
Mr. Warren Curry, 2504 Alton Road, N. W., Atlanta, Ga.
Mr. Norman Kole, 980 Merchandise Mart, Chicago, Ill.
Mr. R. F. G. Byington, 1260 N. Western Ave., Los Angeles, Cal.
Mr. Richard F. Spicker, 419 West Fifth Street, Cincinnati, Ohio

Milwaukee · Newark

Helen Hauser Joins WAAC

Helen Hauser, receptionist at the Chicago division of McKesson & Robbins, has been accepted for enlistment in the WAAC's.

Companies

Monsanto Advances Williams and Renner

Victor E. Williams, assistant general manager of sales of the Organic Chemicals Division of Monsanto Chemical Co. with headquarters in New York, has been promoted to the position of director of sales of the Organic Chemicals Division. Mr. Williams will remain in New York.

Promotion of Frederick C. Renner, assistant general manager of sales of the Organic Chemicals Division of Monsanto, to general manager of sales, with

VICTOR E. WILLIAMS

offices in St. Louis, has also been announced by Julius A. Berninghaus, general manager of the division.

Mr. Williams was born in St. Louis in 1895. He started work in 1915 as office boy to John F. Queeny, founder and first president of Monsanto. After serving with the Missouri National Guard on the Mexican border in 1916, he returned to the company as a member of the order and billing department. In 1918 his national guard unit was mobilized and he was sent overseas.

He returned in 1919 and was assigned to the export sales department, later being promoted to supervisor of the order and billing department. In 1920 he was transferred to the sales department and in 1924 was sent to New York as assistant manager of the New York sales branch, becoming its manager in 1925.

In December 1938 Mr. Williams was promoted to assistant general manager of sales of the Organic Chemicals Division, with headquarters in New York.

Mr. Renner was educated in the St. Louis schools and obtained a B. S. degree at Washington University in 1922. He joined the Monsanto sales staff in 1923 and was transferred to the Merrimac Division at Everett, Mass., in 1929, where he was soon placed in charge of sales of the New England Alcohol Co. and later made assistant manager of sales of the division. In 1939 he was transferred to Monsanto's New York office as assistant manager. He returned to St. Louis in January, 1941, as assistant general manager of sales of the Organic Chemicals Division.

Dr. Hansen Joins Winthrop

Dr. Harold L. Hansen has been appointed administrative assistant to the president of Winthrop Chemical Co., Inc., according to an announcement made by Dr. Theodore G. Klumpp, president. He assumed his new duties immediately.

Before joining Winthrop, Dr. Hansen was secretary of the Council on Dental Therapeutics of the American Dental Association, director of the A.D.A. Bureau of Chemistry, and consultant to the Federal Food and Drug Administration, the Federal Trade Commission and the Council on Pharmacy and Chemistry.

Sterling Not Licensed in N. Y.

Sterling Products, Inc., a Delaware corporation, has been served with a summons and complaint charging it with maintaining an office and doing business in New York without a license.

Attorney-General John J. Bennett acted in response to a petition filed by Sterling Products Corp., seeking a permanent injunction to restrain the defendant corporation from doing business in New York State.

Sterling Products Corp. filed an action in Federal Court last year to prevent the Delaware corporation from using the name, "Sterling" but was denied a temporary injunction.

According to Attorney-General Bennett, Sterling Products, Inc., was organized under the laws of Delaware and incorporated there April 9, 1932. The company was described as a stock corporation, carrying on its business at 170 Varick Street, New York.

Bayer in New Plant

The Bayer Co., Inc. has opened its new plant at Trenton, N. J. with the complete transfer of packing and finishing operations from Rensselaer, N. Y.

The move was made necessary by the expansion of manufacturing and research operations of other Sterling subsidiaries at Rensselaer. Bayer's granulating and tableting equipment will be moved to Trenton this fall, while the actual manufacture of aspirin powder will remain at Rensselaer for the duration.

The new plant with 90,000 square feet of space will employ approximately 200 persons when it is in full operation. All of them, except Frank H. Merry, plant superintendent, who has been with the company for thirty-one years, will be recruited from the community.

With the move of The Bayer Co., Sterling now has five subsidiaries located in New Jersey. The other four are the Centaur Co., and the R. L. Watkins Co. both at Rahway; and Sydney Ross Co. and Sterling International, Inc., both at Newark, which is headquarters for Sterling's entire Latin-American program of economic warfare against the Axis in the pharmaceutical field.

Lederle Advances Smith

Stuart V. Smith, formerly sales manager of Lederle Laboratories, has been advanced to the position of vice-president in charge of sales. J. Paul Folsom has been appointed sales manager and F. R. Neubauer has been made veterinary sales manager. T. Floyd Jones who was formerly with the Schering Corp., has been placed in charge of chain store sales.

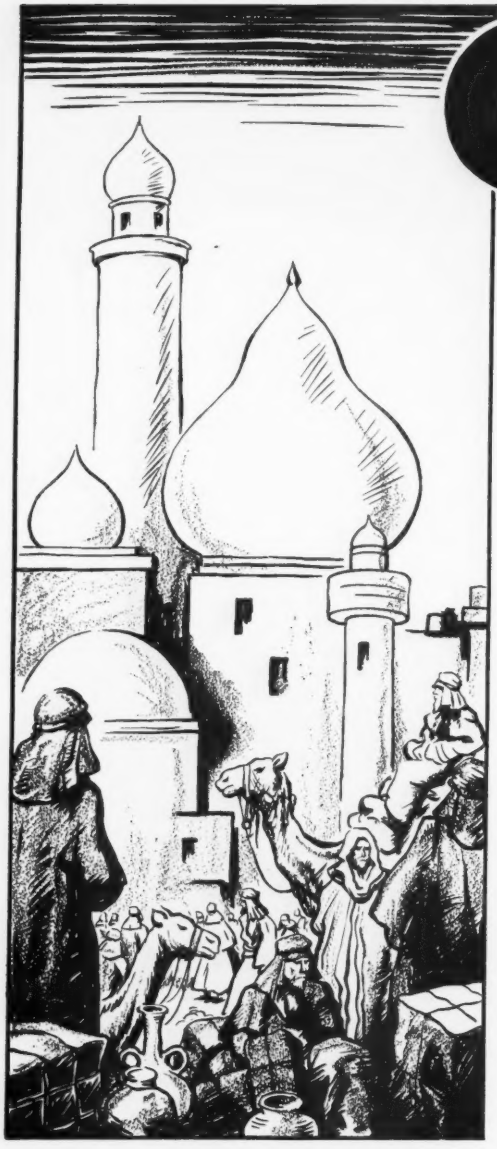
Dr. C. L. Campbell, head of the Veterinary Professional Service department, will be located in St. Louis temporarily until the Lederle hog cholera serum and virus manufacturing plant in St. Joseph is completed.

Parke, Davis Wages Up

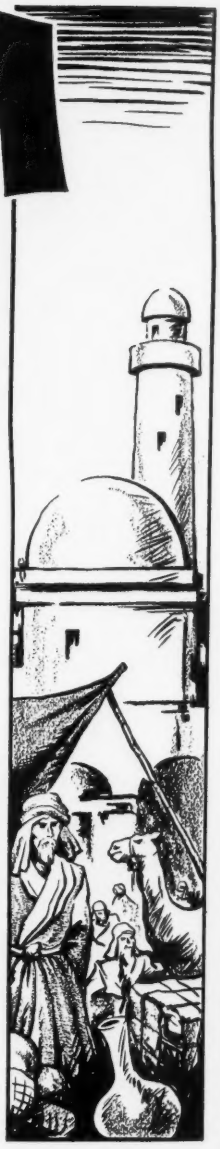
The War Labor Board has handed down a decision which awards wage increases ranging from 2 to 20 cents an hour to approximately 2,600 employees of Parke, Davis & Co., Detroit. Most employees will receive a 6 cent raise, in addition to longer vacations. The awards, which are retroactive to February 2, include reclassification of 400 jobs in accordance with a previous agreement between the company and District 50, United Mine Workers.

Ann McHugh

A daughter, Ann, was born to Mr. and Mrs. Francis McHugh on August 23. Mr. McHugh is associated with New York Quinine & Chemical Works.



GUM
KARAYA
TRAGACANTH
ARABIC
LOCUST



ORBIS GUMS, whole or powdered, are the products of expert experience of forty-two years standing in the selection of fine raw materials and in milling to guarantee complete satisfaction for your most exacting technical requirements.

ORBIS GUMS can be obtained in any mesh from the finest powder to the various granular forms used to a great extent in the drug field—ground in our modern mill at Newark, New Jersey.

ORBIS KARAYA GUM in fine powdered form is specially adaptable for "Wave Sets."

Please let us know your requirements. Working samples upon request.

ORBIS
PRODUCTS CORPORATION

215 PEARL STREET, NEW YORK · FACTORY & LABORATORY, NEWARK, N.J.

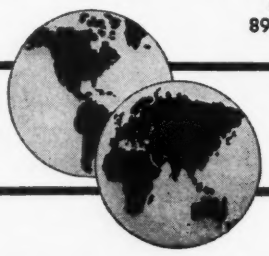
CHICAGO
831 N. Wabash Ave.

PHILADELPHIA
610 Brown Bldg.

BOSTON
89 Broad Street

MEMPHIS, TENN.
1620 Carr Ave.

Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
Thymol	Stearic Acid	Oleo Resins	Food Colors
Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss



Shulton Increases Advertising

Even though WPB's recent ruling limits production in the toilet goods industry, Shulton, Inc., has increased its advertising budget by $16,000 for the fall and Christmas magazine campaign on Old Spice and Friendship's Garden toiletries. Three lines of products will be advertised in twenty magazines: Early American Old Spice for women, Early American Old Spice for men and Early American Friendship's Garden for women.

Seaforth Moves to N. Y.

The offices of Alfred D. McKelvy Co., subsidiary of Vick Chemical Co., and maker of Seaforth toiletries for men, were moved September 1 from Minneapolis to 10 Rockefeller Plaza, New York. It is also planned to move the manufacturing facilities of the McKelvy company from Minneapolis to a new plant in the New York area.

Crabtree Joins Package & Container

William O. Crabtree has joined the Package & Container Corp., New York, as vice-president. Mr. Crabtree was until recently head of the War Production Board branch in New York which he organized. Before his association with the W. P. B. he was president of the Crabtree Refrigeration Corp., Long Island City, and before that was vice-president and treasurer of the Kelvinator Sales Corp.

Lengyels Leave Maurella

Laszlo and Georges Lengyel, New York perfumers, have severed their connection with Maurella Products, Inc., or Morris Handman who presently operate under the trade name of "Parfums Lengyel" or "Lengyel."

Plans for launching a new perfume line under the personal direction of L. and G. Lengyel will be announced at a later date.

Colgate Advances Wilson

Colgate-Palmolive-Peet Co. has made Emerson E. Wilson Pittsburgh district sales manager. He has been sales supervisor in the New York City district for the past two years.

Citrus Oils in Mexico

A large factory and plant, Esencias y Productos Citricos S. A., has been established in Mexico and is already producing citrus essential oils—lime, sweet orange, bitter orange, limetta. Additional equipment is being installed for obtaining numerous essential oils to be distilled from typically Mexican plants. Menthol and thymol have been obtained and the company will be ready in a few weeks to supply these materials in relatively large quantities.

Esencias y Productos Citricos S. A. employs a staff of specialized technicians and among the heads of the firm are Dr. Fernando Rubio, Javier Serra and Alberto Farres.

Schofield-Donald Expands

Owing to greatly increased sales of aluminum hydroxide, Schofield-Donald Co., Newark, N. J., has moved its plant, offices and laboratory to larger quarters at the same address, 88 Shipman Street. New equipment has been installed and provision made for the manufacture of fine medicinal and specialized industrial chemicals.

Thompson Joins Foster-Forbes

Frank W. Britt, manager of the New York office of the Foster-Forbes Glass Co., announces that Charles V. R. Thompson has become associated with that organization. Although a stranger

CHARLES V. R. THOMPSON

to the drug and cosmetic industry, Mr. Thompson enters this field with a long record of successful sales work in the refrigeration industry, most recently as manager of the southern New Jersey territory for the Frigidaire Corp.

Breon Research Chemicals

The George A. Breon & Company laboratories have established a Research Chemicals Division which will prepare synthetic organic chemicals including bile acids, hormones and vitamins. A catalog listing these products was recently distributed to research workers in the medical sciences.

This department is under the direction of Drs. S. W. Sondern and Willard M. Hoehn.

Rosett Returns

Louis A. Rosett, president of Florasynth Laboratories, Inc., and Mrs. Rosett have returned from a vacation of several weeks spent in and around the Thousand Islands. Mr. Rosett who is a veteran angler found the fishing very good and had his best luck fishing out of Gonnanoque. Between fishing trips, he visited the Florasynth Laboratories offices in Montreal and Toronto.

Rare Chemicals Plan

Plans for greatly expanding production of specialized drugs and pharmaceuticals for sale to ethical houses are being put into effect at the newly-acquired Rare Chemicals, Inc., plant at Flemington, N. J., according to Charles P. Gulick, president and chairman of the board of National Oil Products Company, which company recently acquired the seven and one-half acre plant in the sale by the Alien Custodian. It will be operated as a wholly owned subsidiary and will have its own board of directors and officers.

The company intends to expand production of the chemicals and other products formerly manufactured by Rare Chemicals as rapidly as circumstances will permit, utilizing substantial parts of the present organization, augmented with other technically trained men. A stepped-up research program also is being instituted. Among the products now being manufactured at the Flemington plant are anesthetics, hormones and analgesics for ethical distribution.

Officers of the new subsidiary company are Charles P. Gulick, president; Erwin T. Fritzsching, vice-president; Ralph Wechsler, treasurer, and A. A. Vetter, secretary. Mr. Fritzsching, who formerly was president of Rare Chemicals, Inc., will remain as manager.

Lentheric Appointments

Lentheric, Inc., has appointed Mab Wilson a vice-president of the company. She will continue in charge of the salon and will have additional duties in connection with advertising and promotion.

Kurt Loesch, for many years in charge of the laboratories has been elected a director.

The management of the business is under the executive direction of C. S. Gare and W. D. Canaday, vice-presidents. Mr. Canaday continues in charge of sales and advertising. Lowell P. Weicker, president, is on leave of absence in foreign service as a major of the U. S. Army Air Forces.

BAYONNE COMPANY
INCORPORATED
404 FOURTH AVENUE, NEW YORK, N. Y.
TELEPHONE: MURRAY HILL 5-0250-1-2
BAYCO
BC
INC.
Aromatic Chemicals-Essential Oils

New Eppenbach Plant

Eppenbach Inc., has opened a new plant for war production at 44-02 11th St., Long Island City, N. Y.

In addition to this large space, the original plant at 45-10 Vernon Boulevard, Long Island City, is being maintained for the manufacture of colloid mills and homo-mixer machines.

The general office address is now 44-02 11th St., Long Island City.

Glass Companies Convicted

In Federal District Court, Toledo, August 25, Judge Frank L. Kloeb found nine companies and sixty-one individuals in the glass container industry guilty of violating the Sherman Anti-Trust Act.

Judge Kloeb described the offense as a 26-year old patent monopoly and issued injunctions against all defendants in the civil action. The defendants were thereby restrained from engaging in practices which, he said, had allowed an unlawful control of the glass container industry. Corporate defendants were enjoined from holding stock in any other concern in the industry and individuals were enjoined from owning stock in more than one concern and from being or becoming officers or directors in more than one concern in the industry.

In order to stimulate competition in the glass container industry Judge Kloeb rejected a government request that Hartford-Empire Co., Hartford, Conn., be dissolved. Instead, he appointed Representative James A. Shanley, New Haven, Conn., as receiver.

Convicted with Hartford were: Owens-Illinois Glass Co., Toledo; Empire Machine Co., Portland, Me.; Hazel-Atlas Glass Co., Wheeling, W. Va.; Thatcher Manufacturing Co., Elmira, N. Y.; Lynch Corp., Anderson, Ind.; Ball Brothers Co., Muncie, Ind.; Corning Glass Works, Corning, N. Y., and the Glass Container Association, Inc., New York.

Judge Kloeb ruled that the defendants would be enjoined from engaging in interstate commerce unless they (a) comply with the orders of the court; (b) agree to license any one, royalty free, on all present patents and pending applications for patents for the life of the patents, and (c) make available to any one who desires them copies of drawings and patterns relating to suction devices, feeders, forming machines and lehrs.

The decision held that the Glass Container Association was engaged in unlawful practices through its cooperation in the furtherance of some of the aims of the conspiracy and in addition that many of the practices originated there. The opinion states further, "The court believes it best that it (the association) shall continue merely as a statistical and research body, and shall not go afield in an effort to dictate to the industry, or to be used for that purpose.

"Hence its personnel must be changed, including the membership of its board of directors and its officers. The new members are to be subject to the approval of the court and shall have no connection whatever with any of the defendants herein. The so-called statistical committee must be abolished and no committee of a like nature shall be established in the future."

Counsel for Owens-Illinois has indicated that an appeal will be filed.

Tolamini Elected V. P.

Leo V. Talamini has been elected vice-president of Prince Matchabelli, Inc. He began his perfume-cosmetic career in 1923 with Elizabeth Arden. After about three years in the New York office, he was sent to Berlin to establish and head the German branch of the company. During his four-year stay in Europe he also established an Italian company and assisted in the reorganization of both the London and Paris offices. Upon his return to America he became associated with Prince Matchabelli, where he became successively assistant sales manager, sales manager, then general sales manager, which position he has held for the past four years.

Seaforth Advances Richardson

H. C. Richardson has been appointed sales manager of Alfred D. McKelvy Co., maker of Seaforth toiletries for men. For the past two years Mr. Richardson has been west coast manager for the company. Prior to that, he was buyer of toiletries for Donaldson's Department Store, Minneapolis.

McKesson Opens in Yonkers

McKesson & Robbins, Inc., officially opened the new headquarters of its Yonkers division at Hawthorne Avenue and Ludlow Street, that city, on August 13. This division which was formed when the drug house of L. Eisen & Co. became part of the McKesson organization serves Westchester, Putnam and part of Rockland counties, as well as western Connecticut. The new quarters are more than twice the size of those formerly occupied and have a floor area of 45,000 square feet.

Associations

Remington Medal to Lilly

Josiah K. Lilly, chairman of the board of Eli Lilly & Co., Indianapolis, has been selected to receive the Remington Honor Medal for 1942. The award has been made annually by the New York branch of the American Pharmaceutical Association for the past twenty-three years.

Mr. Lilly is known as a pioneer in alkaloidal standardization of medicines. He became associated with his father, the founder of the company, in 1876, and was graduated from the Philadelphia College of Pharmacy in 1882. He became president of the company in 1898 and chairman of the board in 1932.

Presentation of the medal will be made several months hence at a meeting of the New York branch of the American Pharmaceutical Association.

N.W.D.A. Victory Banquet

At the conclusion of the two-day meeting of the National Wholesale Druggists Association meeting which is to be held at the Waldorf-Astoria Hotel, New York, September 28 and 29, a Victory Banquet is to be held in the grand ballroom of the hotel. This banquet will be the first one held by the N. W. D. A. to which all in the drug, cosmetic, and allied fields are invited whether or not they are members of the N. W. D. A.

P. C. MAGNUS

The proceeds of the banquet are to be donated to Army and Navy Relief, the U. S. O., and the American Red Cross. The aim of the committee, which is headed by Percy C. Magnus, president of Magnus, Mabee, & Reynard, is to raise a total sum of $25,000 for these various organizations.

The program planned for the evening is a most unusual and stirring one. The dinner will get under way by eight thirty o'clock with a military band

marching through the center of the ballroom playing the national anthem. At the conclusion of the dinner a floor show of nationally known stage and screen stars is to be put on accompanied by one of the outstanding "name" bands of the country.

Following the conclusion of this entertainment, the diners are to adjourn to various adjacent rooms which are to be appropriately decorated as the Navy Room, the Army Room, the Marine Corps Room, the Red Cross Room, and the WPB Room. In all these rooms refreshments will be served and U. S. O. entertainment will be given. An hour later the guests will return to the grand ballroom which has then been transformed into a Victory Carnival. At this Victory Carnival all sorts of games will be available for the entertainment of the guests. It is anticipated that a very large amount of money for the benefit of the various organizations will accrue as the result of this carnival.

Reservations are priced at $10.00 per cover, and tables of ten, twelve, fourteen, or any number within reasonable limits can be arranged. It is urged by the committee that reservations be made early as the number attending is definitely limited by the capacity of the ballroom. It is expected that about 1,500 can be accommodated. Reservations are to be sent to Percy C. Magnus, Victory Banquet Chairman, 16 Desbrosses St., New York.

Forbes to Address F.W.D.A.

B. C. Forbes, editor of Forbes Magazine, columnist and financial authority, will discuss the war economy and its effect on American industry, at the informal dinner for active and associate members of the Federal Wholesale Druggists' Association, Thursday evening, September 24, at the Biltmore Hotel, New York.

This is a feature of the two-day, streamlined business session, the FWDA War Merchandising Clinic, which is taking the place this year of the annual convention usually held at Hot Springs, Vancouver.

Bohan Heads Committee

Joseph D. Bohan, Centaur Co., New York, has been appointed chairman of the national relations committee of the Proprietary Association, succeeding George A. Hyde who has been forced to resign as chairman because of ill health. Mr. Hyde will remain a member of the committee of which Robert Wilson, Omega Chemical Co., has been made a member.

Stock Addresses DCAT

Fred J. Stock, chief of the Drug Section of the War Production Board was the guest speaker at a special luncheon meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trade at the Hotel Pennsylvania, September 10. Turner F. Currens, chief of the Proprietary and Botanicals Sections, also spoke.

Chemical Golf Winners

The low gross prize at the third golf tournament of the Salesmen's Association of the American Chemical Industry, held at the Hackensack Golf Club, August 11, was won by Paul A. Dunkel. The $25 war bond was won by J. J. Rusk and a set of golf woods by Paul Miller. Other prize winners were: Members low gross B—Leon Miller, the Barrett Co.; low gross C—T. A. Cassidy, Wilmot & Cassidy, Inc.

Members, low net A—C. W. French, Oldbury Electrochemical Co.; low net B—N. H. Fyffe, Oldbury Electrochemical Co.; low net C—P. J. LoBue, Michigan Chemical Co.

Members kickers, R. Boland, Topics Publishing Co.; J. Eldridge, Virginia Smelting Co.; R. L. Hutchins, Commercial Solvents Corp.

Members, high gross, W. B. Mullen, Eastern Industries, Inc.

Guests, low gross, J. J. Rusk; low net, R. H. McCahan; kickers, H. Erickson.

BIMS Golf

The BIMS of New York will hold its next golf tournament of the season at Ridgewood Country Club, Ridgewood, N. J., September 22. At the tournament held July 28 at the Plandome Golf Club, Plandome, L. I., Richard R. Powell, Plexo Preparations, was the winner of the first prize.

Cosmetic Courses

For the seventh consecutive year the School of Education of New York University is offering evening classes in Cosmetic Hygiene and Advanced Cosmetology. Florence E. Wall is the instructor for both courses.

Financial

Abbott Taxes Cut Net

Abbott Laboratories report for the six months to June 30 a net profit, after allowances for an estimated increase of 116 per cent. in reserve for Federal income and excess profits taxes over the 1941 period, of $868,406. This is equal to $1.07 a share on the common stock and compares with a revised net of $986,181, or $1.27 cents a common share last year.

Armstrong Net Down on Taxes

Armstrong Cork Co. reports for the first six months of 1942 a net profit of $1,405,003 from operations in the United States after deducting Federal income and excess profits taxes in the amount of $3,924,319. This is equivalent to 92 cents a share. For the first six months of last year the net income was $2,492,942, or $1.69 a share after taxes of $2,918,749.

Taxes Cut Bristol-Myers Net

Bristol-Myers Co. reports for the June quarter an estimated profit of $315,792, or 47 cents a share against $443,967, or 66 cents a share in the same quarter of 1941.

For the first six months of the year, the consolidated earnings were $1,003,905, or $1.50 a share, after $2,413,011 provision for normal income and excess profits taxes. Net income for last year's period was $1,305,458, or $1.95 a share.

Colgate Earnings Steady

Colgate-Palmolive-Peet Co. reports for the six months ended with June a net profit of $2,241,073, or $1.01 a common share. This compares with a profit of $2,399,074, or $1.09 a share, in the corresponding period last year.

Consolidated surplus was increased $1,484,710 during the six months and a special provision of $690,000 was made from profits for possible additional income and excess profits taxes, bringing the total tax provision for the period to $2,725,000.

Coty Net Down Slightly

Coty, Inc. and domestic subsidiaries report for the six months to June 30 a net income, after $678,515 provision for Federal income and excess profits taxes, of $311,036, equal to 21 cents a share and comparing with a net of $351,148, or 24 cents a share in the first half of 1941 when taxes totaled $176,048. The gross profit for this year's period

amounted to $2,949,486, compared with $2,420,401 in the six months' period a year ago.

Heyden Chemical Earnings

Heyden Chemical Corp. reports for the twelve months to June 30 a net profit of $773,144, equal to $6.51 a share on the common stock.

Mead, Johnson Net Off

Mead, Johnson & Co. and subsidiaries report for the six months to June 30 a net profit, after $759,097 provision for Federal, State and Canadian taxes on income, of $630,892. This is equal to $3.46 a share on the common stock and compares with a net of $844,496, or $4.75 a common share for the 1941 period.

Merck Net Off with Taxes

Merck & Co. Inc. and subsidiaries report for the six months to June 30 a net income, after $3,002,037 provision for income and excess profits taxes, of $1,086,373, equal to 83 cents a share. This compares with earnings of $1,591,073, or $1.45 a share for last year's period after $200,000 appropriation to reserve for contingencies and $2,984,334 tax charges. Net sales totaled $20,248,368 against $19,421,524.

National Oil Earns Less

National Oil Products Co. reports for the six months to June 30 a net profit of $290,129, equal to $1.34 a share. The reserve for taxes amounted to $663,453. For the first six months of 1941 the net profit was $348,250, or $1.78 a share, after provision for taxes of $428,950.

Peoples Drug Net Down

Peoples Drug Stores, Inc. and subsidiaries report for the six months to June 30 a net profit of $381,653, or 78 cents a share against $405,528, or 83 cents a share in the corresponding period of 1941. Federal taxes this year have been estimated at $572,480, against $293,658.

Taxes Cut Pfizer Net

Chas. Pfizer & Co., Inc. report for the six months ended June 30 a net income of $512,222, after provision of $1,282,000 for Federal income and excess profits taxes. This is equivalent to $1.02 a common share, and compares with $584,756, or $1.16 a common share in the first six months of 1941.

Directors declared a dividend of 35 cents a share on the common stock, payable September 10 to stockholders of record August 20.

Plough Earnings Steady

Plough, Inc., reports for the six months to June 30 a net income of $127,291, or 42 cents a share against $126,399, or 42 cents a share last year. Federal income taxes for the period this year amounted to $125,399, compared with $61,663 for the first six months of 1941.

Sterling Product Net Down

Sterling Products, Inc. and subsidiaries report for the first six months of 1942 a net income of $3,491,589 after provision of $4,656,613 for estimated Federal and foreign income and excess profits taxes, including $800,000 reserve for higher taxes anticipated under the new tax legislation. The net income is equivalent to $1.99 a common share and compares with a revised net of $4,752,981, or $2.75 a common share, after taxes of $3,661,386 for the six months ended June 30, 1941.

For the quarter ended June 30 the net income was $823,779, after tax provision of $2,232,416, including $600,000 reserve for anticipated higher taxes, of which $330,000 is applicable to the first quarter. This compares with revised net income of $1,894,802, after taxes of $1,427,470 for the second quarter of 1941.

United Drug Earnings Up

United Drug Co. reports for the first six months of 1942 a net profit of $968,139, equal to 69 cents on the common stock. This compares with a net income of $518,637, or 37 cents a share in the preceding year. Provision for Federal income and excess profits taxes charged against the first half of 1942 amounted to $2,342,848, against $256,536 for the same period of 1941.

Sales for the first half of 1942 increased nearly $8,000,000 or 17 per cent. over the total for the like period of 1941.

Vick Net Cut By Taxes

Vick Chemical Co. reports for the year ended June 30 a preliminary net profit of $2,211,430 after reserve for undetermined losses attributable to prevailing war conditions and $2,222,361 provision for Federal, State and foreign income and excess profit taxes. This is equivalent to $3.25 a share and compares with a net profit of $2,804,026, or $4.12 a share for the previous year after deduction of $1,082,394 for taxes.

Obituaries

William Erhard Weiss

Dr. William E. Weiss, formerly general manager and chairman of the executive committee of the board of Sterling Products, Inc., Wheeling, W. Va., died at Little Traverse Hospital, Petoskey, Mich., September 2, as the result of injuries received in an automobile collision the day before. He was sixty-three years old.

Dr. Weiss was born in Canton, Ohio, December 18, 1879. He received his Ph.G. from the Philadelphia College of Pharmacy and Science in 1896. Following his graduation he operated a drug store for a widow in Sistersville, W. Va., and in 1900 he went to Wheeling and operated a retail drug store.

In 1901 he and A. H. Diebold organized the Neuralgine Co. which in 1917 became known as Sterling Products, Inc. It bought the Bayer drug interests from the Alien Property Custodian in 1919 and from then on Dr. Weiss headed the concern, which became the largest drug combine in the country. In the fall of 1941, Dr. Weiss was succeeded as chairman of the board and at that time he was made chairman of the executive committee of the board.

For many years he was chairman of the legislative committee of the Proprietary Association and by virtue of that fact was a member, ex officio, of the executive committee of the association.

He is survived by his widow and one son, W. E. Weiss, Jr.

Edward G. Westlake

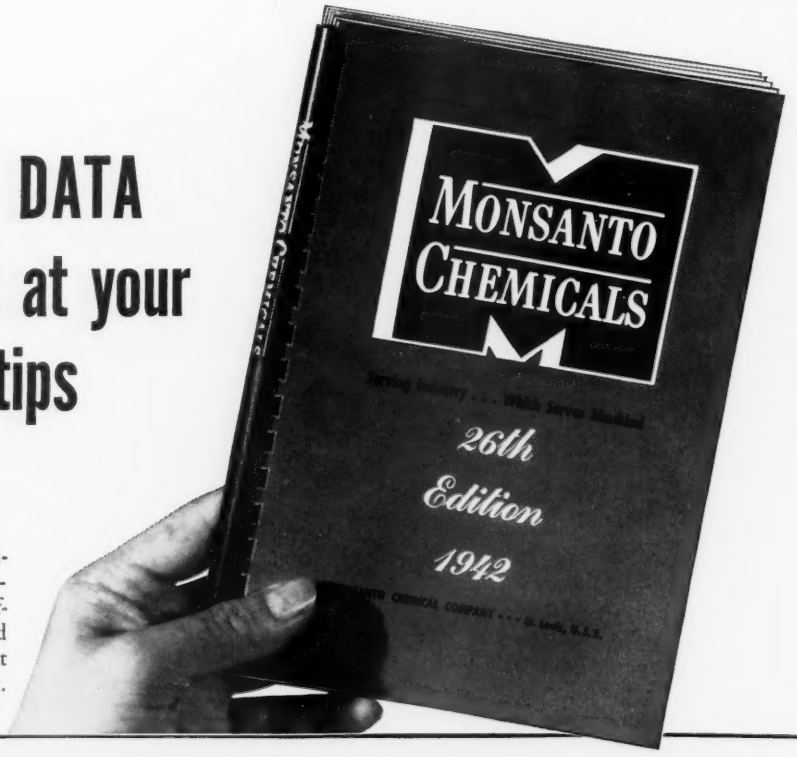
Edward G. Westlake died suddenly on September 10 at his home in Evanston, Ill. He headed the wholesale toilet goods department of Marshall Field & Co., Chicago in November 1931, after nineteen years with the firm. In 1939 he became associated with the Caron Corp., which he represented in the middle west, and at the time of his death he was covering that territory for Parfums Weil, New York, having joined that organization the first of this year.

Barney Atlas

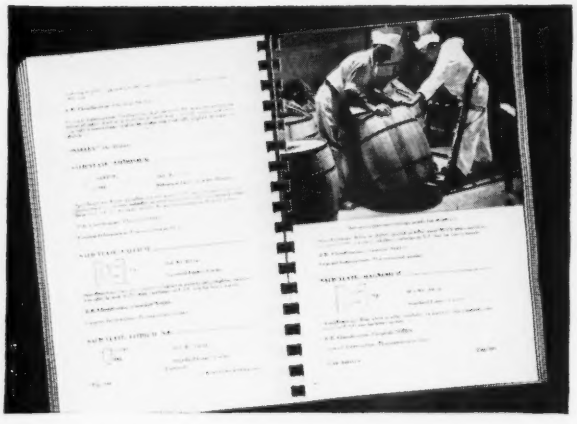
Barney Atlas died suddenly at his home in Philadelphia, August 10. He was thirty-nine years old.

Mr. Atlas had been associated with the beauty and barber supply trade for over fifteen years and for the last two years was manager of the beauty department of Lightfoot Schultz Co. Prior to that he was with J. Eavenson & Sons, Camden, N. J.

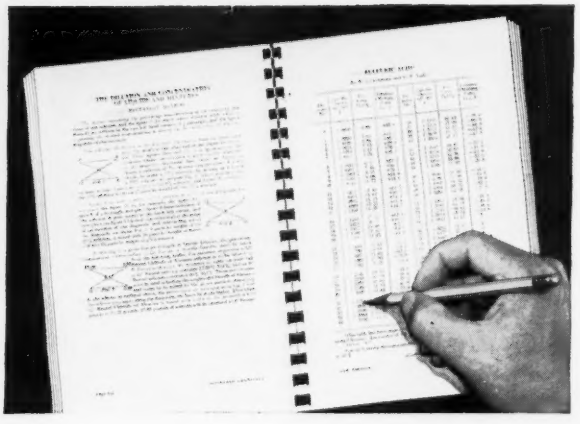
USEFUL DATA you'll want at your fingertips



1. Here is information on Monsanto's complete line of products arranged in handy, ready-reference form to save you time and trouble in finding exactly what you want . . . when you want it.



2. Included in the 170 pages of this new edition of the Monsanto products book you will find structural formulas . . . accurate descriptions of physical and chemical characteristics . . . brief data on uses that will often tell you at a glance whether or not a specific material gives promise of meeting your needs . . . and a complete list of all available Monsanto technical literature.



3. Also included are 25 pages filled with useful general data and tables like these. To have this time and trouble-saving information at *your* fingertips, simply write today on your business letterhead for a copy of your 26th edition of "Monsanto Chemicals." MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, St. Louis, Missouri. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal.

MONSANTO CHEMICALS
SERVING INDUSTRY . . . WHICH SERVES MANKIND

"E" For Excellence—The Navy "E"—denoting the highest service accomplishments of the United States Navy—awarded to Monsanto December 31, 1941, "in recognition of production of ordnance materiel vital to our national defense."

F.T.C. ACTIVITIES

Orders

Black Leg Vaccine

Cutter Laboratories, Berkeley, Calif., with depots and branch offices at Los Angeles, Chicago, San Antonio, Seattle, Denver, Forth Worth, El Paso, Boise, and New Orleans, engaged in manufacturing a vaccine preparation designated "Blacklegol," recommended as a means of rendering cattle immune to an ailment known as blackleg, has been ordered to cease representing that its product is 100 per cent. efficient or 100 per cent. effective in giving immunity to the disease of blackleg. The order also prohibits the use of statements or representations which unfairly disparage vaccines sold by the respondent's competitors or which represent that the efficiency or effectiveness of blackleg concentrated bacterin or blackleg cultural aggressin is equal to only 50 per cent. of that of Blacklegol in providing immunity to blackleg; the use of any specific percentage to designate the immunizing value of Blacklegol or its comparative immunizing value with other preparations unless such percentage is based upon controlled experiments sufficient to definitely establish the percentage of value claimed; and use of the terms "100 per cent. efficient" or "50 per cent. efficient" or other comparative percentages in describing manufacturing procedure or production wastes in such a way as to imply that such percentages apply to immunizing effectiveness.

Not A Germicide

Pat V. James, trading as The N-A Company, Laurel, Miss., engaged in the sale of "N-A No. 7," "Vicine," "Nature's Aid," and "N-A," has been ordered to cease representing that the preparation is a powerful germicide or powerful antiseptic, or is other than a mild astringent and antiseptic; that it is unequaled in stopping bleeding or will arrest venous or arterial hemorrhages; that it is a cure for athlete's foot or eczema or has any value in the treatment of such diseases other than to give relief from itching and irritation; that it is a splendid iron tonic; that its use will prevent lockjaw or blood poisoning; that it is an effective treatment for indigestion, sour stomach, ptomaine poisoning, rheumatism, or kidney disorders; or that it has any substantial therapeutic value as an internal medicine for the treatment of any disease or condition of the body.

Stipulations

Hair Pomade

Mack Jenious and Gensie Jenious, trading as Makasar Beauty Products Co., and as Mme. Gensie Jenious & Co., Montclair, N. J., selling "Makasar Wonderful Pomade" and "Makasar Wonderful Pomade Double Strength," have stipulated to discontinue representing that either of the preparations has any therapeutic value in the treatment of conditions which cause falling hair.

Chinese Herbs

Yee Why, also known as Henry W. Yee, trading as Dr. Henry Yee Herb Co., Sacramento, Calif., engaged in the distribution of herbs for various diseases, has stipulated to cease representing that the herbs can be depended upon to purify the blood or impart normal healthy tone to the entire body, or that they constitute a competent treatment or effective remedy for nerve symptoms or pains, nervousness, neuritis, rheumatism, liver or kidney disorders, cancer of the bowels, heart trouble, anemia, or other ailments.

Vi-Co Compound

Irving Z. Harris and Pauline B. Harris, trading as Veltex Co. and Vi-Co Sales Co., North, Birmingham, Ala., selling "Vi-Co Compound," have stipulated to discontinue representing that the preparation is a vegetable and mineral compound; that it will afford relief for indigestion or sour stomach; that they guarantee any specific profit or any specific investment of money made by purchasers of the preparation; and that prospective agents, salesmen, distributors, dealers or other representatives can make profits or earnings within a specified period of time which are in excess of the average net earnings consistently made in like periods of time by active full-time agents, salesmen or other representatives in the ordinary and usual course of business and under normal conditions and circumstances.

The respondents further stipulate that in advertising they will cease use of the word "tonic," to designate the preparation, and that in computing the period of time during which specified earnings or profits were made, they will include all the time actually used for demonstration, solicitation and any other services performed in connection with the sale of the preparation by representatives alleged to have made such earnings or profits.

Chamberlain's Lotion

Chamberlain Sales Corp. and L. H. Chamberlain, its president, Des Moines, Iowa, engaged in selling "Chamberlain's Lotion" has stipulated that it will cease representing that any test made to show that Chamberlain's Lotion flows more readily than other lotion indicates that it is superior to other lotions, or that other lotions containing tragacanth gum or other filler are sticky.

Complaints

Olive Oil Claims

Lekas and Drivas, Inc., 19 Roosevelt St., New York, importers and distributors of olive oil, are charged with misrepresentation of "L. & D. Olive Oil" and "Aristocratic Imported Virgin Olive Oil."

In advertisements the respondent represented, among other things, that: "In many countries of the Mediterranean despite poverty and the lower standards of living, such ailments as appendicitis, gallstones and infections of the bladder are almost unknown. A general state of health prevails. This is attributed to the regular use of olive oil in the diet," and "olive oil has about three and one-half times more nutritive value than dried meat."

Through these and similar advertisements, the complaint alleges, the respondent has represented that olive oil is the elixir of health; that it contains vitamins E and F; that it will purify the entire system, cure skin irritations when applied externally, and has a tonic effect upon the vital organs of the body. All these representations are declared to be

Dow

MONOCHLORACETIC ACID

A Chemical of Varied Usefulness, Vitally Essential to Pharmaceutical Manufacturers

Recent utilization of Monochloracetic Acid for the manufacture of synthetic vitamins adds still another to its many applications in the field of pharmaceutical chemistry. Dow produces this indispensable chemical whose varied uses are vitally important to the trade.

As Monochloracetic Acid is an essential raw material for the manufacture of Glycine, Barbituric Acid and Barbituric Acid derivatives, the Dow product is in wide demand. The reactivity of the chlorine molecule as well as the carboxyl group makes Dow Monochloracetic Acid also an ideal tool in research on new pharmaceutical chemicals.

Dow is meeting these large demands for Monochloracetic Acid as a chemical intermediate for the pharmaceutical trade and produces it also for many other purposes. Large quantities of the Dow product are used in the preparation of various dyes, plastics, photographic chemicals and other industrial applications. For whatever purpose you may need Monochloracetic Acid, you can rely absolutely on the quality and uniformity of the Dow product. Inquiries are invited.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York City • St. Louis • Chicago • San Francisco • Los Angeles • Seattle • Houston

DOW

DOW PHARMACEUTICAL CHEMICALS

false and misleading, the complaint alleging that olive oil is of no value in the prevention of appendicitis, gallstones or infections of the bladder; that it will not purify or accomplish any specific effect upon the entire system; that it is not a tonic, and that the nutritive value of olive oil is not three and one-half times more than that of meat.

Alimentone

Thomas E. Collins, trading as Thomas E. Collins Co., San Francisco, distributor of "Alimentone," is charged with misrepresentation.

The complaint alleges that in advertisements the respondent has falsely represented that the product provides symptomatic relief for catarrhal conditions, colds, nasal catarrh, mucus colitis, and non-allergic types of asthma and bronchitis; that it tones and aids in toning mucus membranes, fortifies them against infection, cleanses and aids in cleansing cell tissues of toxic impurities and has therapeutic value in the treatment of inflammation of the mucus membranes; that it affords relief for bronchial asthma and bronchitis, and that it eliminates toxic substances and deposits from the body and tissues. The complaint alleges that all these representations are false and misleading.

Bee-Dew Cosmetics

Vivian S. Nash, doing business as Bee-Dew Cosmetic Co., Detroit, is charged with misrepresentation.

The respondent is engaged in the manufacture of "Bee-Dew Special Hair Grower," "Bee-Dew Special U-Gro," "Bee-Dew Scalp Oil," "Bee-Dew Shampoo," "Bee-Dew Pressing Oil," and "Bee-Dew U-Gro."

The complaint alleges that the respondent formerly was president of Bee-Dew Laboratories and later president of Bee-Dew Products, Inc., later dissolved. After dissolution of Bee-Dew Products, Inc., the respondent, under the trade name "Bee-Dew Cosmetic Co., continued the manufacture and sale of substantially the same preparations formerly sold by the corporation of which she was president.

In advertising literature the respondent represents, the complaint alleges, that the preparations provide a cure or remedy for falling hair, baldness, dull hair, scalp irritation, and dandruff, and constitute an effective treatment therefor; that their use will cause new hair to grow; and that Bee-Dew O-No will insure complete protection from offensive body odor. All these representations are declared to be exaggerated, false and misleading and the complaint alleges that the preparations have no therapeutic value in the treatment of such conditions or disorders in excess of cleansing the hair and scalp, allaying itching due to minor irritations of the scalp, and in facilitating the removal of accumulated loose dandruff scales; that the preparations will not cause new hair to grow, and that Bee-Dew O-No will give protection from body odors for a limited time only and will not give complete protection from such odors.

Powatan Herb Tonic

Pow-A-Tan Medicine Co., Huntington, W. Va., selling "Powatan Herb Tonic," is charged with misrepresentation.

In advertising the respondent is alleged to have represented the preparation as a cure for all common human ailments. Among those enumerated are neuritis, arthritis, rheumatism and many others. Representations also were made that the preparation will effectively prevent such diseases and conditions as colds, appendicitis, tuberculosis, catarrh, typhoid, and other contagious and acute diseases. The respondent represents that $1 is the regular price for the quart size package of the product and that an offer to sell three such packages for $1 is a special and limited offer.

All the foregoing representations, the complaint charges, are grossly exaggerated, false and misleading; the preparation is not a cure or remedy for any of the ailments or diseases named; and the offer to sell three packages for $1 is not a special or limited offer as represented, but is the regular and customary price in such quantity lots generally available to the public.

Case Formulae

Paul Case, Brockton, Mass., engaged in the sale of medicinal preparations designated "Case Combination New Improved Method," "The New Improved Case Combination Method," and "Case Combination Formulae," is charged false advertising and misrepresentation.

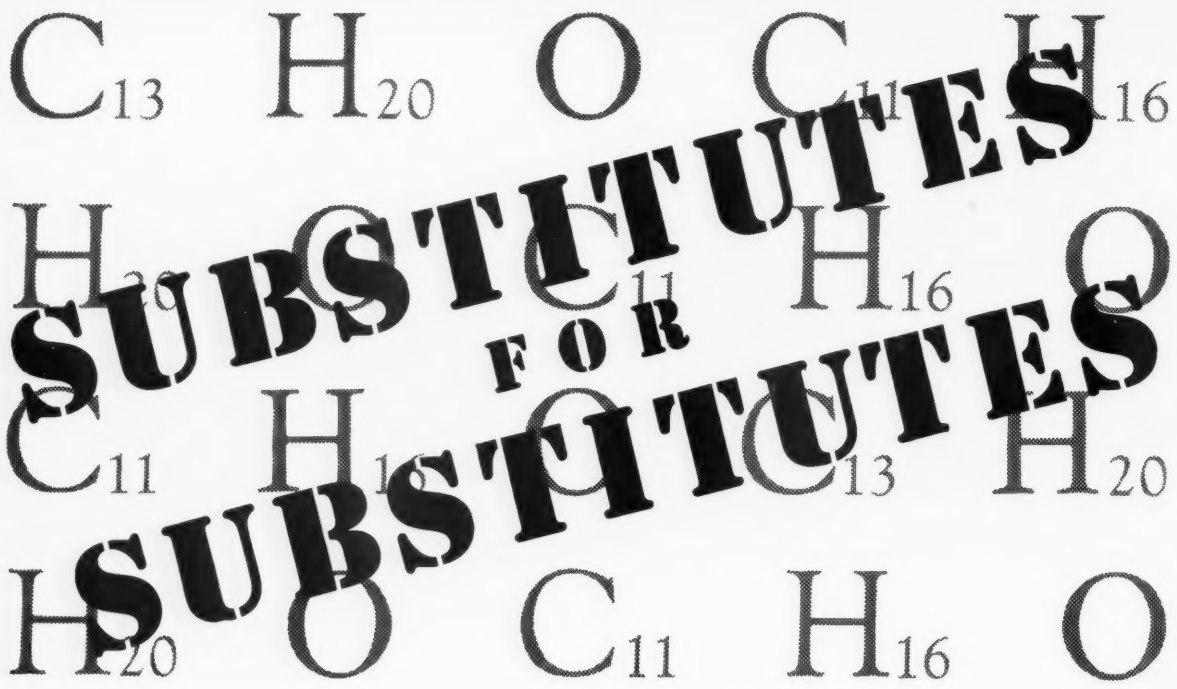
"The Case Combination Method" consists of two medicinal preparations, Formula No. 1 and Formula No. 2. In advertisements the respondent allegedly has represented the preparations as treatments and cures for rheumatism, arthritis, sciatica, and neuralgia, and asserted, among other things, that "Both of these formulae have been worked out scientifically by a doctor of high standing in the medical profession. Formula No. 1 contains a standard ingredient prescribed by doctors everywhere for relieving pain in rheumatic, arthritic, sciatic and neuralgic conditions," and "Formula No. 2 * * * contains powerful but harmless anti-acids, which tend to neutralize excess acidity often associated with rheumatic conditions."

The complaint alleges that these representations are false and misleading; that the preparations used separately or in combination do not constitute a cure or remedy for the ailments enumerated; that Formula No. 1 has no dependable therapeutic value in the treatment of the ailments and is not a cure or remedy for excess acidity; that its continued use will not afford lasting benefit, and that Formula No. 2 is an irritant cathartic with a small amount of alkali and is not a cure or remedy for and has no recognized therapeutic value in the treatment of the ailments mentioned. The complaint also declares that Formula No. 2 "is dangerous to health in that its use as directed may result in chronic local irritation of the alimentary tract, gastro-intestinal disturbances, and interfere with or upset normal digestive processes.

Wemett's Salve and Ointment

Edward J. Wemett, Frank J. Wemett and Theodore Wemett, copartners trading as Edward Wemett & Co., Los Angeles, engaged in the sale of "Wemett's Salve" and "Wemett's Ointment," are charged with false advertising and misrepresentation.

The complaint charges that the respondents have represented that "Wemett's Salve" constitutes a proper and safe treatment for all kinds of corns, callouses and warts and that "Wemett's Ointment" constitutes a competent and effective treatment for athlete's foot, sunburn, itching piles or hemorrhoids, burns, insect bites, externally caused skin irritations, and boils. The complaint alleges that the preparations are not effective treatments for the ailments named and that the advertisements fail to reveal that use of "Wemett's Salve" under customary conditions may result in injury to the user. Due to the high concentration of salicylic acid in it, the preparation will be keratolytic to a degree that may remove the other skin to the extent that ulcers will result, and unrestricted use of the preparation on corns and callouses may result in definite injury to the skin while its use on warts or conditions having the general appearance of warts may result in serious injury to the user, according to the complaint.



There was a time when life for the research chemist was comparatively simple. He'd create a new formula for grateful clients, or aid in bringing costs down by suggesting a change in basic ingredients. However, that was all — in what seems — the long ago.

Today, he is a much harassed man.

Not only are vital ingredients denied him — unavailable or price prohibitive — but the substitutes that he so painstakingly created to take their place, have themselves been placed on shortage or priority listings. Today, he must concentrate the full measure of his skill in the creation of *Substitutes for Substitutes.*

Many manufacturers, fighting to keep production moving, have turned to us with their problems. We have, in most cases, been able to supply the necessary help. Our research chemists have, for more than a quarter of a century, made the Florasynth name a byword in the industry, for the creation of effective and successful synthetics. So much so, that our reproductions of natural floral absolutes and true essences have long been accepted as *primary essentials* in the manufacture of countless successful perfumes, lotions and other toiletries.

So many of our *Substitutes for Substitutes* have found their place in standard production that we feel confident that *your* problems can be just as effectively solved by the Florasynth Laboratories.

★★★ *FOR VICTORY BUY U. S. WAR BONDS AND STAMPS* ★★★

Florasynth LABORATORIES, INC.

1533 OLMSTEAD AVE., NEW YORK

CHICAGO • DALLAS • DENVER • LOS ANGELES • NEW ORLEANS • SAN FRANCISCO • SEATTLE

FLORASYNTH LABS. (CANADA) LTD.—MONTREAL • TORONTO • VANCOUVER • WINNIPEG FLORASYNTH LABORATORIES DE MEXICO S. A.—MEXICO CITY

INDUSTRY'S BOOKS

Chemical Engineering Plant Design, by Frank C. Vilbrandt, Ph.D., Second Ed., 452 pp., McGraw-Hill Book Co., New York, Cloth, $5.

This book is presented as an analysis of the fundamental principles and factors that are involved in the development of a technically and economically efficient plant process from the laboratory stage through the pilot plant stages to the commercial size unit. The subject matter has been selected and developed with particular reference to advanced students of chemical engineering and professional chemical engineers. The correlation of the data obtained through laboratory experimentation into a workable basis for designing a plant for the commercially feasible production of a chemical commodity takes into consideration a thoroughly studied organization of equipment and flow of materials in process and a study of storage and expansion. The writing of specifications for materials and equipment and the study of preconstruction cost accounting are also considered in the analysis of the submitted design. As presented, plant design is built around a visualization of the process in terms of equipment as well as in terms of chemical reactions. Contents: Introduction; Foundations; Drainage; Piping Installation; Pumps and Pumping; The Building; Power and Power Transmission; Development of the Design Project; Flow Diagrams; Selection of Process Equipment; Plant Layout and Elevation; Preconstruction Cost Accounting; Locating The Chemical Plant; General Tables; Elementary Problems; Complete Projects; Project Preconstruction Cost Data; Index.

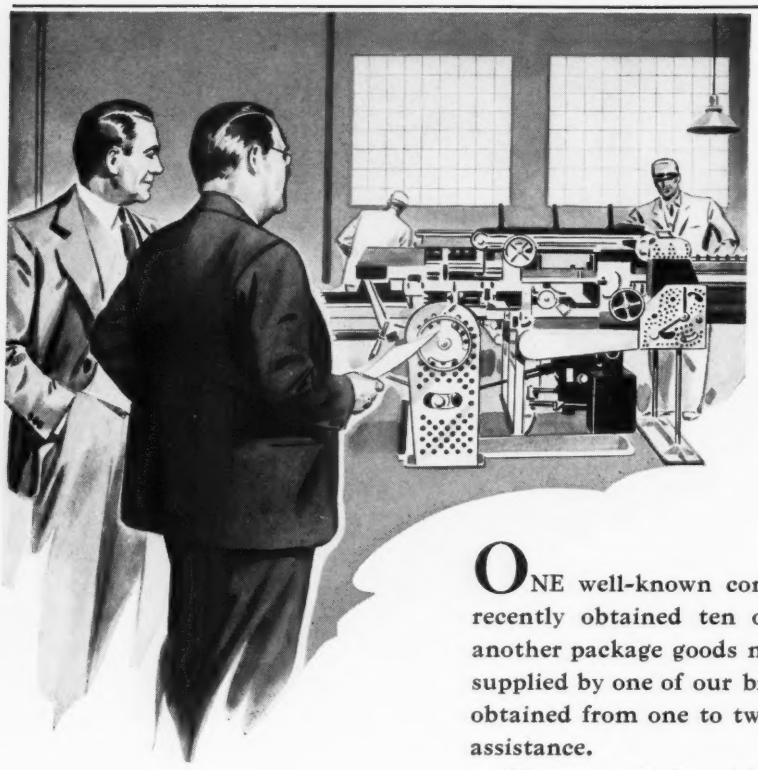
Textbook of Clinical Parasitology, Including Laboratory Identification and Technic, by David L. Belding, M.D., Professor of Bacteriology and Experimental Pathology, Boston University School of Medicine, 888 pp., Illus., D. Appleton-Century Co., New York, Cloth, $8.50.

This work describes the protozoan, helminthic and arthropod parasites of man, and the diagnosis, treatment and prevention of the disease they produce. It differs from the traditional textbook of parasitology in the extensive use of tables and graphic representations that facilitate study and access to information, in the presentation of the immunity of parasitic infections, and in the inclusion of a special section on technical methods for laboratory workers. Parasitology covers numerous and varied fields in protozoology, helminthology and entomology. Its scope extends beyond the intimate knowledge of specialized workers in these fields. The writer has approached the subject not as a specialist, but from the broad viewpoint of a biologist with a medical background, who has followed for many years the teaching of parasitology to medical students. Therefore, the arrangement and allotment of subject matter are based upon the practical needs of medical students, physicians and laboratory workers, and the zoology of the parasite has been subordinated to the pathology, diagnosis, treatment and prevention of the disease. The work is divided into the following main sections: I—General Parasitology; II—The Protozoa; III—The Nemathelminthes or Round Worms; IV—The Cestoidea or Tapeworms; V—The Trematoda or Flukes; VI—Arthropoda; VII—Technical Methods For The Diagnosis And Treatment Of Parasitic Infections.

A Short Course in Qualitative Analysis, by F. E. Brown, Professor of Chemistry, Iowa State College, Revised Ed., 337 pp., D. Appleton-Century Co., New York, paper, $2.60.

The accumulation of new data and the modification of theories have been so extensive since the First Edition of this work 10 years ago, that revision required a rearrangement of chapters and complete rewriting of the major part of the text. The section on theory now discusses the structure of atoms, the nature of the solid state, limitations on the significance of the terms molecule and valence, the Debye-Huckel theory of ionization, Bronsted's theory of acids and bases, and the hydronium ion and amphiprotic behavior. The analytical procedures have been written for semimicro samples, but provision has been made for easy translation to the macro scale. Each procedure has been shortened so that it includes directions only, but notes follow each procedure. These notes include cautions, warnings against likely errors, reasons for each operation, references to needed supplementary information, and sometimes alternate procedures. Placed before the procedures for each group is a graphic chart which outlines the analysis of the group. It includes enough data to suggest the entire procedure to one who is only moderately familiar with it and at each step refers to the detailed procedure for further information. At the back of the book is a series of report blanks for use in the laboratory.

We're helping manufacturers help each other



A war-time service for those who need WRAPPING MACHINES

ONE well-known company in the package goods field recently obtained ten of our wrapping machines from another package goods manufacturer through information supplied by one of our branch offices. Other concerns have obtained from one to two machines each as a result of our assistance.

We are rendering this service gratis because we cannot deliver new machines except to those who have high priorities. *And even then our war work makes early delivery difficult.*

If you need a wrapping machine, tell us its *type* or *send us a sample of the wrapping* you wish it to do. We'll try to find a manufacturer who can sell or lease you *one of our machines* that will suit your purpose. We'll also give you information about obtaining the necessary approval from Washington.

We do not buy nor sell these machines—merely bring the interested parties together.

Write or phone our nearest office

PACKAGE MACHINERY COMPANY
Springfield, Massachusetts
NEW YORK CHICAGO CLEVELAND LOS ANGELES TORONTO

PACKAGE MACHINERY COMPANY
Over a Quarter Billion Packages per day are wrapped on our Machines

PRODUCTION FORUM

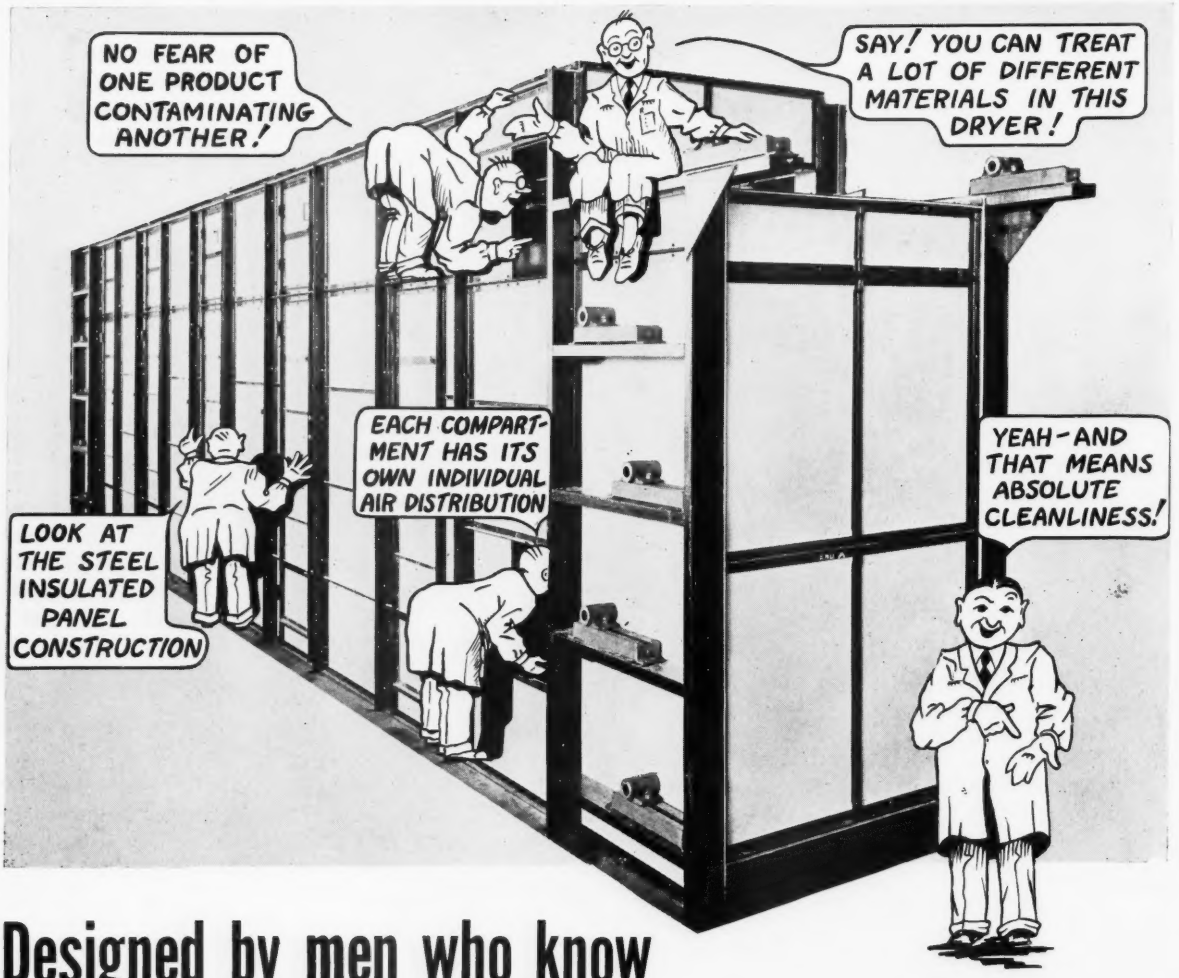
By FRANCIS CHILSON
Production Engineer

VOLUNTARY CONSOLIDATION

To facilitate the prosecution of the war the English government has closed down many plants so that workers and, in some cases equipment, can be made available for other war work in which such workers and equipment can be utilized more efficiently. While it is recognized that the size of this country limits the transfer of workers and equipment to local areas, it is a fact that plant consolidation would in many cases make a major contribution to the industrial effort. Other factors are involved also—shipping for example. In our industry the extraction of crude drugs offers a shining example of lost motion, cross-shipping and the utilization of a lot of shipping space in ships, freight cars and trucks. It does seem pointless to ship a 500 pound bale of crude drug from hell to harlem in order to make ten pounds of alkaloid or other extractive, especially when you consider that every extract you could possibly need can be purchased from sources that extract drugs in large tonnages and in some cases even control their production, gathering or importation. I know of course that there is a traditional prejudice against the purchase of finished extracts because of fear of adulteration. When you deal with reliable manufacturers such fears are groundless. One old timer told me once that he'd be damned if he'd buy drug extracts because of fear of adulteration. Yet he was buying all his drug ground and anyone who knows crude drugs knows that if the seller is so minded he can adulterate ground drug easier than the extracts. This suspicion of adulteration is a traditional hangover from the days when there were no regulatory laws and anything could be sold for any purpose. If adulteration of any raw material exists it is your fault. You should set very high quality standards and then pay the price. A cosmetic manufacturer told me several years ago that he switched his essential oil account because he discovered that he was being charged $600.00 a pound for natural oil of jasmin when he could get from a competing house "natural oil of jasmin" at $300.00 a pound. If the poor sap had the brains that God gave little insects he would have known that it was the second supplier and not the first who was gyping him. Purchasing agents are too often penny wise and pound foolish. In your purchasing agent's office you should hang a sign: "You get what you pay for." So buy extracts and save labor, space, and equipment.

PURCHASING AGENTS

A really good purchasing agent is a treasure without price and hence is about as rare as a forty carat diamond. When they really are good I have the greatest respect and admiration for them because their knowledge of materials, markets and sources of supply must be (but very rarely is) encyclopedic. In every re-organization with which I have had anything to do the question has always come up as to whom the purchasing agent shall report. Many if not most purchasing agents regard themselves as little independent gods who should be completely free of fetters and be responsible to nobody but the presidents of their respective firms. I have always recommended that regardless of the official to whom the purchasing agent reports his purchases should be controlled as to quantity by the plant manager and as to quality by the control laboratories. In small organizations unquestionably he should report to the factory manager and in large ones to the general manager or the president. In the one case purchases usually are made for the current period or the current


NO FEAR OF ONE PRODUCT CONTAMINATING ANOTHER!
SAY! YOU CAN TREAT A LOT OF DIFFERENT MATERIALS IN THIS DRYER!
EACH COMPARTMENT HAS ITS OWN INDIVIDUAL AIR DISTRIBUTION
YEAH - AND THAT MEANS ABSOLUTE CLEANLINESS!
LOOK AT THE STEEL INSULATED PANEL CONSTRUCTION

Designed by men who know drug industry problems

The popular Ross Tray Type Dryer illustrated above is but one of many types of dryers operating as part of the Ross Air Systems for Drug and Chemical plants. These Ross Systems encompass a range of temperatures from a low point of freezing up to approximately 150° F. They are designed to meet any or all of the functions of Drying, Chilling, Refrigeration, Air Conditioning, Humidification, Dehumidification. Investigate the possibilities for improving your product or process—for reducing spoilage losses. You can rely upon recommendations by Ross.

ROSS INDUSTRIAL Air Conditioning and Drying

Send today for our descriptive Bulletin 210

J. O. ROSS ENGINEERING CORPORATION

350 MADISON AVE., NEW YORK, N. Y.

Chicago . . . . . Detroit

In Canada—ROSS ENGINEERING OF CANADA LTD., Dominion Sq. Bldg., Montreal, P.Q.

ROSS SYSTEMS EMBRACE

Heating . . . . Baking . . . . Drying . . . . Chilling . . . . Refrigeration . . . . Air Conditioning . . . . Humidification . . . . Dehumidification . . . .

year; in the latter purchases are often made for several years in advance and such commitments are in the nature of speculative market ventures involving large sums of money which are beyond the purview of current plant operations. In these days really good purchasing agents are covering themselves with deserved glory because in spite of scarcities and priorities they somehow manage to get the goods—or at least satisfactory substitutes. It is a good thing for the purchasing agent to have reached his job through the plant or through the control laboratory. He then has the background of technical experience and knowledge which insure sound decisions and unremitting follow-up. Most plant managers complain of their purchasing agents because they lack an appreciation of the urgency of plant operations and never seem to give a damn when the goods are delivered. Moreover, they are too often routine clerks who never seem to realize that other sources of supply exists beside the ones shown in their files. On a job recently we had to have tin solder in a hurry. The purchasing department after a delay of two weeks during which they contacted recorded sources of supply reported back that it was impossible to procure tin solder. In disgust the plant manager called in a clerk and sent him uptown to a Sears Roebuck store and in a half hour the kid was back with all we needed.

EMPLOYEES

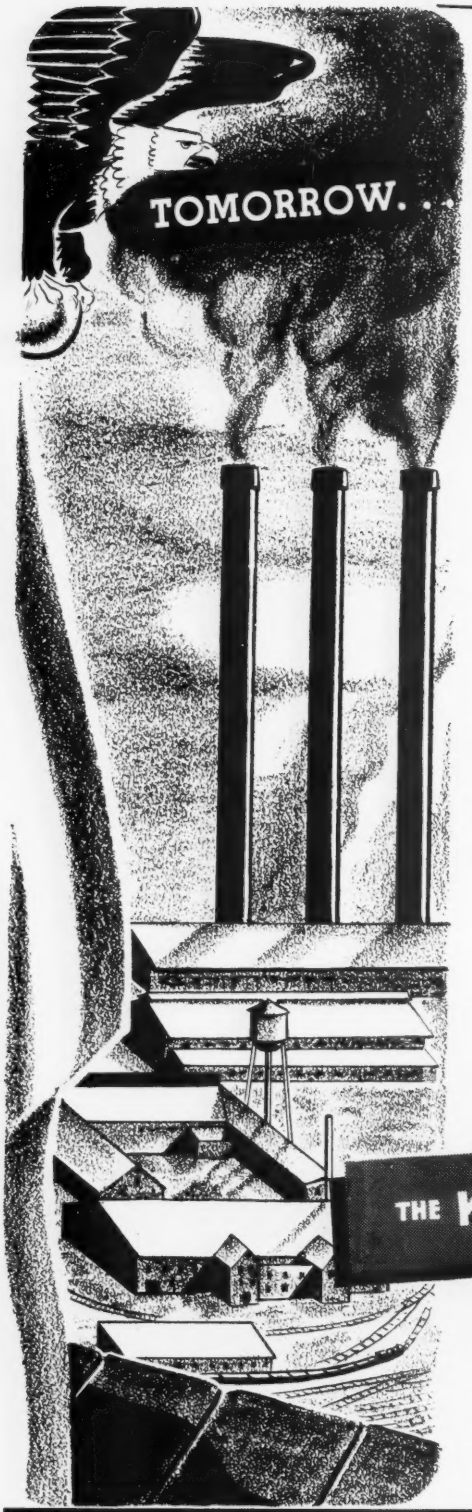
I wish there was some other term to use in referring to the rank and file. I think the word "associates" is better than employees because it implies a degree of equality and mutual interest wholly lacking in the latter term. The great job of you and me as plant managers is by some means to generate in each individual associate the same degree of interest that we show in our jobs and in our companies. So far we have failed in this primary job of plant management. The degree to which we have failed is nowhere more strikingly attested than in the strike of the General Cable Co., which was caused by the fact that female as well as male employees were required to wear a green button whenever they went to the john. This ruling was an inexcusable and humiliating invasion of the associates' dignity. Yet you can see what happened. Some smart alec supervisor discovered that there was too much smoking and loitering in the toilets. The green button seemed a good idea and it would have been if the workers had been Nazi serfs instead of free and equal citizens of this beautiful country. As it was a strike resulted. The supervisor's action was in fact sabotage and he should have been shot for it. I remember a similar case some years back during the CIO agitation. This fortunately didn't result in a strike because I headed it off before it went too far. In the plant in question the job of carrying messages and mail from one department to another was done by an extremely pretty brunette with beautifully chiseled ankles and a way of looking askance at me with smiling eyes. I used to look at her eyes once in a while. It goes without saying that she was extremely popular with the men throughout the plant. And I don't mean for the reason you are thinking of either. One day the time study man decided to determine exactly how much time was taken to deliver the messages to the several departments and when I came in later in the morning I found him following the kid with a board and stop-watch. The kid was red-faced with embarrassment and all the people in the plant were ridiculing the time study man. I stopped the performance pronto and, when I pointed out that such a ridiculous act might not only cause a strike but that it would certainly undermine the excellent job the time study man had done, the time study man was amazed at my reaction. He'd studied workers at their several tasks and as they didn't object he hadn't supposed that the messenger would mind his stepping on her heels. In other words his zeal for efficiency destroyed his ability to distinguish between what was important and what was trivial. All workers react pretty much as we do. If you respect their inherent dignity and if you can make them feel important you can go a long way toward generating the interest in their work which is the very essence of esprit de corps.

PACKAGING SUBSTITUTES

You have read of the paper caps, lipstick and rouge containers made by F. N. Burt Co. of Buffalo and other firms. Substitutes for ointment and brilliantine tins also for cream jars are now available. The Randolph Paper Box Co. of Richmond, Va. sent me some samples of round paper boxes which are being used for packaging hair dressing. These boxes look like face powder boxes and are lined with a specially treated paper which makes the boxes impervious to grease. It would not be difficult to make a seal which would make these boxes air tight and thus permit their use for the packaging of certain creams.

I hope you birds realize that next year you may not get any metal caps; that you very likely will not get any plastic caps. This leaves you paper and wood to play with. If you are not running tests on substitutes you'd better get going. You still have time to determine how your products will stand up with substitute materials. For a while there was a flurry of investigation into substitutes but this seems to have cooled off because as yet manufacturers have had no particular difficulty in getting metals for packaging purposes. But with the scrap drive petering out and with steel mills running about 500,000 tons behind monthly capacity I can't imagine that very much metal will be available for closures and containers next year. One thing the WPB should do at once is to start collecting closures. These could be passed through and assorted in collection depots and manufacturers could buy used caps. There would of course be an extra cost for cleaning, relining and inspection which in normal times would not be justifiable but a used cap is certainly better than no cap at all.

There are several ways of sealing bottles and jars other than conventional methods. You can use wooden



and TOMORROW . . . and TOMORROW

Tomorrow . . . there will be a brighter, more beautiful America, an America that has been tested in the crucible of terrible fire, and found not wanting!

Tomorrow . . . there will be a resurgence of American ingenuity . . . with victory on the fields of commerce, after the victory on land, sea and air has been written into the pages of history!

Tomorrow . . . this company will resume all its normal tasks . . . strengthened by the challenging test of time . . . its tradition stemming back more than half a century and embracing critical periods during which the nation has been locked in the throes of three wars.

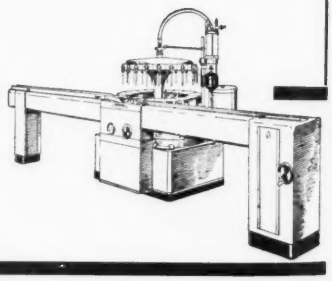
Completely automatic, semi-automatic, hand-fed equipment to clean, fill, close and convey bottles, jars, tins and collapsible tubes.

FILTERS . . PUMPS . . PERCOLATORS

THE KARL KIEFER MACHINE CO.

CINCINNATI, U. S. A.

NEW YORK
BOSTON
CHICAGO
SAN FRANCISCO
SEATTLE
LOS ANGELES
LONDON, ENGLAND



UNITED STATES GOVERNMENT BONDS
will always be the world's premier investment.

caps or plugs and hold them firmly in place with viscose caps or gel caps. I do not know yet whether such closures would be sufficiently air tight for some preparations but the idea is worth a thorough test. You can now get wooden caps having a metal insert to form the threads. I doubt whether the metal will be available for these inserts next year. I have seen no satisfactory threaded wooden caps yet. Wood warps, cracks and moreover is difficult to thread accurately.

You might try experimenting with the type of closure so long used on the famous Lea & Perrins Worcestershire Sauce bottle. This as you will recall consists of a glass plug which fits into a cork collar. There is no reason why this collar should not be made of paper. This seal is satisfactory. It is air tight, moisture tight and is of course a re-seal. I laid out the Lea & Perrins plant and I designed a continuous belt type corker for pressing down the plugs. The cork collars are first inserted two at a time by a hand fed corking machine. The throats of this corker are hand fed by one operator at about 110 bottles per minute. Two operators are employed to start the plugs into the collars. The compression belt does the rest.

Another idea with which I am tinkering consists in the application of the ampouling principle to bottling. This method consists in the use of an egg shell thin glass thimble resembling a small whiskey glass. This glass thimble is inverted over the neck or mouth of the container, which has first been stoppered with a wooden or paper plug. When the thimble is in place it resembles somewhat the appearance of a gel cap. The bottom portion of the thimble or skirt is fused directly to the bottle neck below the neck ring. Thus the seal is made hermetic. Following appropriate instructions on the label the user breaks the thimble in order to open the bottle. The inside plug prevents any or the glass particles from getting into the preparation. This idea has further amplifications about which I shall write later as soon as laboratory tests are completed. I might add that excepting for the difficulty of getting bottle molds changed, it would be possible to draw out the top of the bottle neck to form a seal skirt which could be flame fused over the top of the plug inserted into the bottle.

Before leaving the subject of packaging material substitutes I'd like to add that the Randolph boxes mentioned above are made by the same firm which for fifty years made the old paper ointment boxes which up until 1920 were used all over the world. At present it is the only box—so I've been informed—which has been accepted by the U. S. Army for ointment packaging. The present paper treatment is not suitable for packaging creams in which water is the external phase of the emulsion. But the company is working on a new paper treatment which should be water resistant.

JOBS WANTED

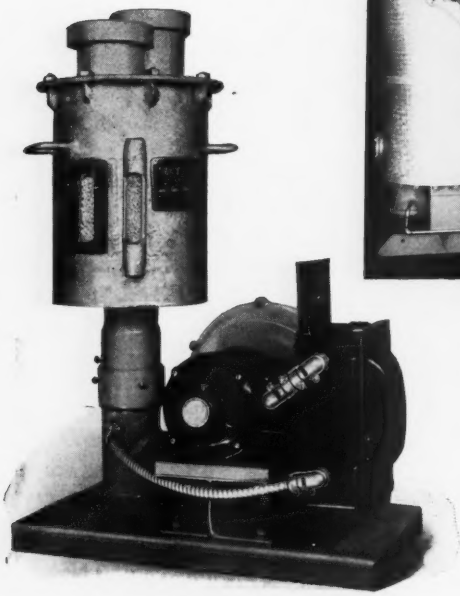
A number of men, chemists, engineers, and production men have written me saying they'd like to change their present jobs. If you need anyone like this drop me a line. I don't know any of these men personally but their records look good.

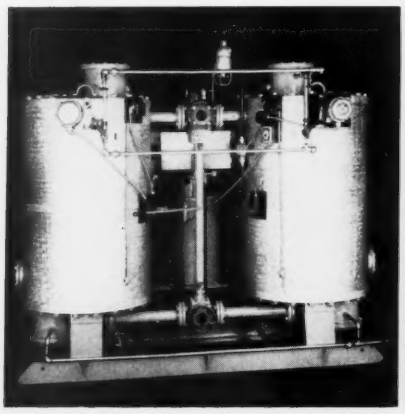
ROUGE STICKS

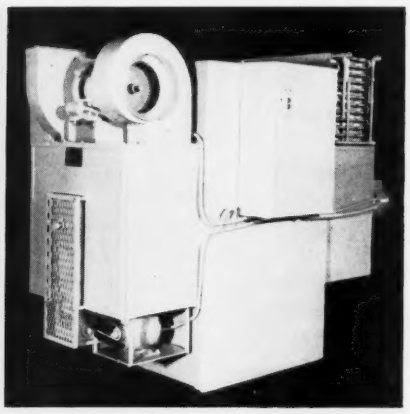
I never could understand why more rouge isn't made in the form of a lipstick. It should be much easier to apply and the woman can dispense with the filthy little puff with which she now dabs her face. In using the stick she supplements her art work by using her finger tips to spread the rouge or she uses a bit of facial tissue. To one cosmetics maker I did suggest the use of swatches of paper impregnated with rouge powder so that each swatch would constitute a single application. Since containers are so short why doesn't some enterprising cosmetic maker devise a lipstick which could also be used as rouge? You and I know that the only difference in formulation between a lipstick and paste or cream rouge lies in consistency. Speaking of sticks it may be well to mention in passing that face powder also could be applied conveniently in stick form. With collapsible tubes becoming so scarce the time is ripe for the introduction of a tooth paste brick or cake. The idea here is to package the cake in a little slide box made of wood or paper so that the user after wetting the brush could conveniently rub it across the cake to get the requisite amount of paste. The brick of course would not be hard; it would be rather soft.

PELLETING

I wish more of you would do a little work on pelleting. It's a swell way to make granulation for the purposes of tablet making. One of these days soon I am going to try pelleting crude drug before extraction to see what effect a uniform granular particle will have on percolation time and efficiency. It is true that pelleting machines as they exist today are designed for the animal food industry and hence are larger than our trade requires. Also some of them are not especially easy to clean. The job made by the California Pellet Mill Co. is compact and relatively easy to clean. I have used it to pellet drug and to some extent chemicals. The boys at Norwich tried with little success to use a pellet mill for a magnesium granulation. But the drag of such a material is terrific and I don't see how it could be pelleted without special dies. The trouble with the experimental work that has been done to date is that it has had to be done with dies designed exclusively for the compression of feed materials all of which are extremely coarse by comparison with powders used in the manufacture of tablets. When a thing looks good there is always a way to lick the little problems that arise. All that is needed is a little development work. I wish that F. J. Stokes could be persuaded to look into this just as soon as the war allows. A small job that could be used to pellet little batches as well as big would be just the ticket.







LECTRODRYER

dries AIR • GASES AND ORGANIC LIQUIDS

● Important to successful operation of tableting and coating processes is Lectrodryer, which furnishes a supply of dehumidified air at atmospheric pressure, to prevent condensation of moisture in rooms or on materials. In addition to controlling humidity, Lectrodryers are also furnished for operations at higher pressures for drying compressed air, gases and organic liquids.

LECTROBREATHER

keeps *Moisture* from OIL and CHEMICAL TANKS

● Now, you can get Lectrobreathers to prevent entrance of atmospheric moisture into oil and chemical tanks. It permits only dry air to enter the tank when emptied, or when air enters due to temperature drops.

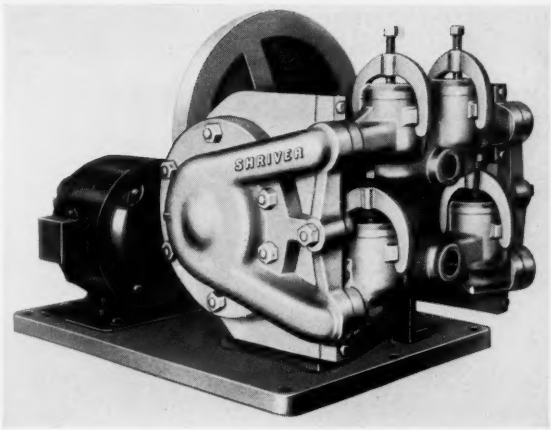
● Lectrodryer and Lectrobreather equipment are furnished in many standard types and sizes, and are also built to specification for special service requirements.

Write for additional details on Lectrodryers and Lectrobreathers.

They use Activated Aluminas—the dependable, time-tested adsorbents.

PITTSBURGH LECTRODRYER CORPORATION

FOOT OF 32ND STREET - PITTSBURGH, PA.



NEW SHRIVER DIAPHRAGM PUMP

A new design added to the line of Shriver Diaphragm Pumps is the streamlined top feed, bottom discharge unit which is adapted particularly for handling slurries or suspensions which contain a high percentage of crystalline or quick settling solids which may be corrosive, abrasive, heavy or valuable, delicate or hazardous. The material is fed into the upper manifold through the ball valves and into the heads at each end of the pump in a clean sweeping motion, thereby assuring that with each forward motion of the diaphragm covered piston, the material is forced out through the lower pair of ball valves and out through the lower manifold. This does not permit settling or accumulation of solids in the pump heads.

The pump is made in a complete range of capacities from 1 to 100 G. P. M. and for delivery pressures up to 100 p. s. i. and a suction lift of as high as 18 feet.

Drug Plant Cultivation

(Continued from page 272)

rake, forking into low trucks and hauling to a still (mint type). It was possible to run the still for 18 hours per day at the rate of one ton per hour and the job was completed in seven working days. The timing of the operation was so perfect that no lot of green dill was exposed to the air for more than two hours. The yield of oil was high, the oil of exceptional quality and the labor cost per pound very low.

Machinery has been devised for harvesting flowers with revolving rakes so that several tons of the flowers from a dense planting may be gathered by one machine in a single day. Attachments for blowing out the leaves or other debris results in a clean crop. It is desirable to have the growing crop quite uniform in height and this is accomplished by mowing the fields early in the season. Sometimes several crops per year can thus be picked from the same plants.

To facilitate machine-picking of leaves, annual seedings, even of perennial plants, may be desirable. By rotating annually or biennially closely-sown drug crops with cultivated farm crops or a cultivated drug crop, it is possible to keep the fields free from weeds for the non-cultivated drug crops. A method has been devised for the harvesting of henbane leaves from first year's growth where the large leaves lie close to the ground, instead of from second-year plants where the leaves must be hand-picked from the stalk, by the use of a simple machine (horse-drawn) in which a heavy blade is drawn forward down the row (or two rows) of plants at the surface or just below the surface of the ground, thus separating more leaves per hour than ten men could pick by hand. Furthermore, the crop can be mechanically raked up and conveyed by truck to the drying house. When the leaves are half to two-thirds dried they can be shaken in a mechanical shaker to remove sand and dust, then the drying can be completed to less than 5 per cent. of moisture. Such drug assayed much higher than second-year leaves in an adjoining field; there was little trouble with insects; no stems were present; and the total yield per acre was higher. It commanded a premium price.

Experiments are now in progress for growing shrubs for two to four years from cuttings to form "whips" about six feet high from which the fresh bark can be rapidly removed mechanically. With 5000 cuttings to the acre and a yield of 30 per cent. by weight of bark from the shrubs, the experiments look good. Furthermore, the dried drug is of exceptionally high quality. Also, the removal of root bark mechanically from these "whips" seems to be possible.

Selling the Goods—A fine crop of high-grade drug is of little value to the producer until sold at a profit. There is practically no "free" market. The jobber has assumed the prerogative of "setting the price." The only way to establish your market is by contract with manufacturers. This is hard to do until you have established a reputation for high-quality goods at reasonable prices and for fair dealing and adherence to contracts. When such a market is once established, however, it is possible to plan your crops with an assurance of selling the goods at an established price. Many manufacturers of established medicines are desirous of protecting their sources of raw materials and are willing to enter into long time contracts at reasonable prices as compared with the import price. Of course, if the producer receives an increase over the import price during "depression" times, he should concede a price below the import price during "war" times.

Conclusion—This fine array of precepts and examples may look good to the novice but not so good to the experienced grower who has met the innumerable difficulties of the "specialty" cropper for years past. However, there is now abundant opportunity for a number of persons or corporations to establish themselves in this type of production not only to meet the needs of the present emergency but to establish our country on a much firmer foundation to meet the needs of the future as concerns our supply of high-grade botanical drugs.

EPPENBACH ORIGINAL

Triple Action

LIFTS YOUR PRODUCTS TO *Higher* DISTINCTION

THIS POWERFUL TURBINE HAS A WHOLLY DIFFERENT DESIGN TO MAKE TRIPLE ACTION MORE EFFECTIVE

IT'S 'WAY AHEAD FOR EMULSIFYING — HOMOGENIZING — GRINDING

● You win quicker consumer recognition when finer qualities are accentuated in your products with the EPPENBACH COLLOID MILL. Its original *triple-action* turbine breaks liquids more violently—its mechanical and hydraulic shearing is micrometrically adjusted even to a point where clearances appear closed. *No air is pulled in!* Temperature is regulated by water jackets. Only moving part is the conical rotor which compensates for wear. Self-cleaning, simple, sturdy. *It assures exact control!*

● APPLICATIONS. *Drugs:* stable emulsions, as mineral oil or agar; to grind and disperse magnesium hydroxide for milk of magnesia; grind glands, chick embryos and tissue for serums and vaccines; grind and smooth salves and ointments; produce colloidal bismuth.

● *Cosmetics:* to grind lipstick; emulsify oils and base for creams; homogenize hand lotions; grind and smooth creams and ointments; impart high gloss to creams.

Send for latest literature.

EPPENBACH INC.

Processing Equipment for Over 29 Years

45-10 VERNON BOULEVARD • • • LONG ISLAND CITY, N. Y.

Automatic filling and sealing

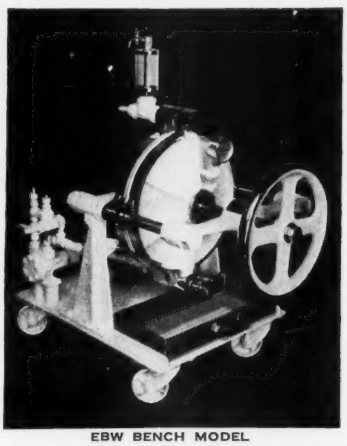
Need a smaller size package?

Automatic filling and sealing of paper packets is fast and economical. Packets offer many merchandising advantages. Send quantity of your material for test purposes . . . for return to you in packets . . . for report. No obligation. Write, wire or phone for full details.

THE BROWN BAG FILLING MACHINE COMPANY
FITCHBURG, MASS.

West coast representatives:
Peter D. Bowley & Associates
369 Fifth St., San Francisco, Cal.

for powders, granules, crystals



EBW BENCH MODEL

LOOK AT THE *ADVANTAGES* OF THIS ALL-PURPOSE

ASBESTOS DISK BENCH MODEL FILTER

. . . for the small plant — also ideal for experimental work in large plants.

. . Completely portable, with built in pump and motor.

. . Three gallon a minute pump capacity.

. . Capacity can be easily doubled by adding two additional rings.

. . Plug to an electric socket, and the machine is ready to operate.

For proof of this remarkable all-purpose filter send us a sample of your liquid for demonstration. Send it TODAY!

ERTEL ENGINEERING CORPORATION

EXECUTIVE OFFICES AND FACTORY AT
KINGSTON, N. Y.
NEW YORK SALES OFFICE AND SHOWROOM
40 WEST 48th STREET
MANUFACTURERS OF LIQUID HANDLING EQUIPMENT

The COMPOUNDER'S CORNER

SYRUP SUBSTITUTES

A series of artificial syrups containing a water-soluble gum as thickening agent and sweetened with soluble saccharin were prepared about one year ago. They were flavored with artificial fruit essences and buffered to a *p*H of 4.8 with 1.3 per cent. of citric acid and 4.4 per cent. of sodium citrate. The high concentration of buffer salts was used in order to observe the effect of the addition of an electrolyte on the gum solution. As a preservative a combination of 0.02 per cent. of Butoben and 0.1 per cent. of benzoic acid was used. The thickening agents with amounts used were as follows:

8 per cent. citrus pectin No. 100,

3.1 per cent. Tylose (methyl cellulose),

2 per cent. extra high viscosity Methocel (methyl cellulose),

2 per cent. Gelloid (irish moss),

18 per cent. acacia,

1½ per cent. tragacanth,

1 per cent. locust bean gum,

1.5 per cent. Iscoalgin (purified alginate),

3 per cent. Orbalgin (purified alginate),

3 per cent. apple pectin No. 210,

3 per cent. Kelgin (sodium alginate),

8 per cent. apple pectin No. 100,

3 per cent. karaya gum,

A combination of 50 per cent. glycerin and 20 per cent sorbitol.

Syrups containing Tylose, Methocel and acacia were unsatisfactory directly after preparation. The syrups containing the Orbalgin, apple pectin No. 210, citrus pectin No. 100, apple pectin No. 100, karaya gum, Iscoalgin and the combination of 20 per cent. sorbitol and 50 per cent. glycerin contained sediments after one month's storage at room temperature. The syrup containing Gelloid showed a few coarse particles in suspension after one year at room temperature, but it was considered satisfactory. The syrups containing Kelgin, tragacanth and the locust bean gum were of satisfactory stability after storing for one year at room temperature.

Since the syrup containing the Kelgin was quite viscous, 2 per cent. would probably be more satisfactory than the 3 per cent. used in the above experiment. It is interesting to note that a syrup containing 3 per cent. apple pectin No. 210 adjusted to a *p*H of 5.2 jellied after six months while a similar syrup adjusted to a *p*H of 3.9 had only a small amount of sediment after thirteen months' storage at room temperature. *C. L. Huyck, J. Am. Pharm. Assoc. Pract. Pharm. Edition, July 1942.*

BUBBLE BATHS

Application of modern wetting and foaming agents have had a good deal to do with the growing success of the bubble bath. With the omission of soap, hard-water and acid solutions no longer interfere with detergent action and foaming power. Sodium bicarbonate and an acid ingredient may be incorporated with these synthetic materials to add to the foam production. One type of organic compound on which these blends are based is that of the sapamines, salts of diethyl amino ethyl oleyl amide and diethyl amino ethyl stearyl or lauryl amide. These fatty-acid condensation products are not compatible with strongly alkaline salts, as sapamine base is liberated and its usefulness destroyed above about pH 7.6.

Among the modern commercial products is one which depends for its detergent action on another of the synthetics, the sodium salt of an alkyl benzene sulfonate in which the alkyl radical contains about 12 carbon atoms. As sold, the detergent carries about 60 per cent. of sodium sulfate. The bubble-bath preparation contains about 20 per cent. of the detergent product and 80 per cent. of modified soda or sodium sesquicarbonate, $NaHCO_3Na_2CO_3,2H_2O$. The powdered material is pressed into tablet form.

Other products are based on the fatty alcohol sulfates for detergent and foaming action, often with other foaming agents added. The fatty alcohol sulfates being indifferent to the effect of pH and hard water, can be combined with either acid or alkaline ingredients. Examples of suitable formulas are the following:

(I)

	Parts by weight
Sodium lauryl sulfate	400
Soluble starch	50
Sodium cholate	20
Sodium bicarbonate	260
Tartaric acid	180
Adipic acid	50
Pine-needle oil	20
Fluorescein	0.1

(II)

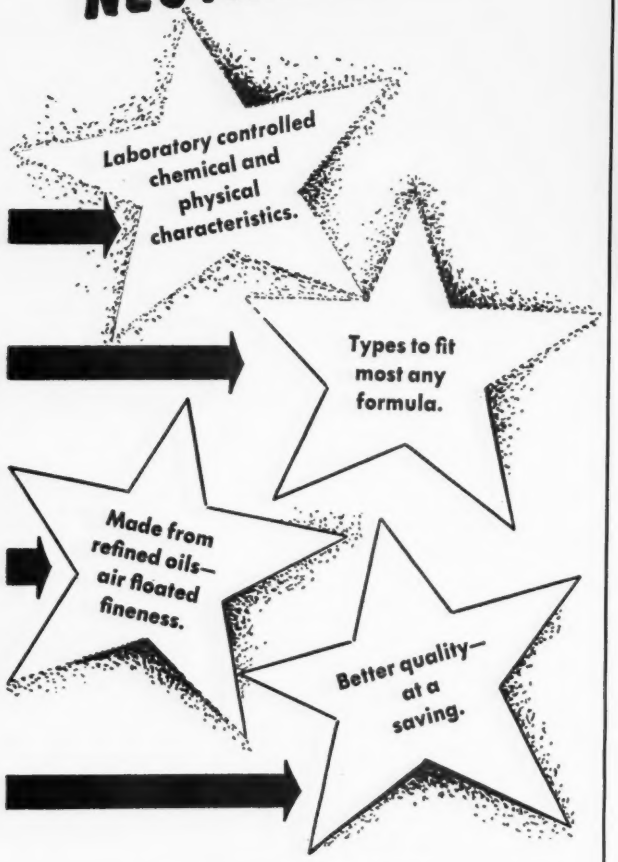
	Parts by weight
Sodium lauryl sulfate	130
Sodium bicarbonate	450
Tartaric acid	350
Sodium cholate	10
Soluble starch	50
Pine-needle oil	10

In the first formula, the sodium lauryl sulfate is the effective detergent, starch and sodium cholate being foam stabil-

A 4 STAR HIT!

POWCO BRAND
REG. U.S. PAT. OFF.

NEUTRAL SOAPS


Laboratory controlled chemical and physical characteristics.
Types to fit most any formula.
Made from refined oils—air floated fineness.
Better quality—at a saving.

POWDERED NEUTRAL SOAPS
TESTED PERSIAN QUINCE SEED
CONCENTRATED SHAVING CREAM BASE

JOHN POWELL & CO.
112 East 32nd Street,
New York City.

LOOK TO CALCO
FOR LEADERSHIP THAT COUNTS

● To every pharmaceutical manufacturer there is special significance in Calco's leading position in the field of Sulfa drugs. This leadership in development as well as in terms of quantity production stems from two factors which have always been typical of Calco. These are alert, forward-looking research—and exceptional ability to carry laboratory discoveries through to commercial production. These same factors mean extra assurance of dependability to users of any and all chemical and pharmaceutical products bearing the Calco label.

SULFAPYRIDINE N.N.R. (and Sodium Monohydrate)
Nicotinic Acid Amide
Nikethamide
Sulfanilamide U.S.P.
Cinchophen N.F.
Neocinchophen U.S.P.

SULFATHIAZOLE N.N.R. (and Sodium Monohydrate)
Mandelic Acid U.S.P.
Methylene Blue U.S.P. (Powder—Crystals)
Calcium Mandelate
Glutamic Acid HCL

Aminoacetic Acid N.N.R.
Calcium and Sodium Pantothenate
2-Methyl-1, 4 Naphthoquinone

PHENOTHIAZINE
(For Veterinarian Use)

Certified Colors for Pharmaceutical and Cosmetic Use

Pharmaceutical Department
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
BOUND BROOK Calco NEW JERSEY

izers, and bicarbonate plus organic acid, a carbon dioxide producer. It would seem more logical to use all tartaric or all adipic acid as the acid ingredient, since a proportion of adipic acid will not change the hygroscopicity of the tartaric acid present. About 50 grams of this (I) should give a sufficient volume of foam for a full bath, while 200 grams would probably be required of the second (II) product. *C. A. Tyler, Soap.*

RANCIDITY PREVENTION

Oils and fats containing photosensitizing pigments are refined to check the development of rancidity by percolation through a column of finely powdered sugar. The pigments are absorbed in the sugar and removed from the oil or fat. Mayne R. Coe and Mayne R. Coe, Jr., to the people of the U. S. A. for free use. U. S. Patent No. 2,272,964.

SHAVING SOAP

A shaving material comprises the reaction product of a metal compound upon fatty acids melting above 56° C. and a reaction product of metal compounds upon casein, in addition to glycerine and menthol. In contrast to former materials, this solid shaving material contains no powder-type mineral components. There can be added as binders starch soluble in glycerine or water, gum arabic or tragacanth. *Inka-Vertrieb Giorgini. Swiss Patent No. 211,383.*

CHALK MIXTURE

Chalk mixtures containing prepared chalk, soluble saccharin, cinnamon water, distilled water and variable amounts of bentonite were prepared. The bentonite seems superior to the more expensive acacia as a suspending agent for this purpose; concentrations between 0.9% and 2.4% are most suitable. Elimination of fermentable materials (sucrose and acacia) produced a biologically stable preparation, but some samples after long standing developed odors resembling toluene.

The toluene-like odor is not produced when cinnamon water is replaced by peppermint water.

An improved formula for chalk mixture containing prepared chalk, bentonite (magma), soluble saccharin, peppermint water and distilled water is suggested. This product is palatable and is compatible with many of the drug preparations that are prescribed with chalk mixture. *L. W. Schleuse and J. B. Stocklon, J. Am. Pharm. Assoc.*

FIBER OIL CONTAINER

Development of an all-fiber plastic-lined container which is impervious to oil was announced by Raymond S. Macmillan, president of the Macmillan Petroleum Corp., Los Angeles.

The tinless container is produced by direct processing of such surplus crops as corn, other grains, flaxseed, tallow, animal tissues, bone and clay, it was stated. The basic fiber is made from straw and waste paper.

Mr. Macmillan said that the process will be made available to the petroleum industry. While the first use of these containers will be to package oil, it is possible to foresee their eventual use for such other products as beer and soup, he suggested.

The process was invented by Albert A. Robbins, consulting chemist and research engineer of Macmillan Research and Development Laboratories, who developed three new compounds all impervious to oil.

One is the adhesive used to bind together the three-ply, spirally wound paper from which the new containers are fashioned and to cement the tops and bottoms to the cylinder walls. Another is used to fix the labels to the containers, and the third is a tough and elastic synthetic plastic, used to coat the interiors.

GLYCERIN SUBSTITUTES

Among substitutes for glycerin are sorbitol and diethylene glycol, but these materials are just as vital to the war effort as glycerin itself. An exception is the ginseng root, a perennial herb (*Panax quinquefolium*), indigenous to eastern North America. This plant grows wild in woods, especially in the mountain regions, from Quebec and Ontario, Canada, south to Georgia. The root, which vaguely resembles the human form, is the part employed as a glycerin substitute.

The root contains a glucosidal principle which suggests its possibility as a hydroscopic agent. This particular use of the plant, however, is believed to be restricted to one tobacco company, and little hope can be held now for its general use. *Foreign Commerce Weekly, Aug. 29, 1942, p. 6.*

NEW PHYTOSTEROL

A new phytosterol, campesterol, has been isolated from rapeseed oil, soya bean oil and wheat germ oil. The analyses indicate that it has an empirical formula of $C_{28}H_{48}O$. It has not been found in cottonseed oil or in tall oil. *E. Fernholz and H. B. MacPhillamy, J. Am. Chem. Soc., 63 (1941), 1155.*

PURIFYING GLYCERIN

Synthetic glycerol, produced by hydrogenolysis processes, is highly impure and the isolation of C.P. or even U.S.P. grades has heretofore proved extremely difficult. A new approach to the problem—namely, crystallization in the presence of suitable solvents—readily yields glycerol of any degree of purity required. As a result of this process it is now possible to produce by a simple one-step treatment with hydrogen any desired quantity of high-quality glycerol from such abundant carbohydrate materials as starch and dextrose. *H. B. Hass and J. A. Patterson. Ind. Eng. Chem., 33 (1941), 615-616.*

VIBURNUM PRUNIFOLIUM

For many years the value of viburnum prunifolium in the treatment of uterine disorders has been the subject of controversy. There is no satisfactory means of standardizing preparations of the drug and the evaluation of its efficacy in terms of symptomatic relief is difficult. Much of the experimental work on the drug has been done with crude extracts of the bark and many samples of the drug have been found to be extensively adulterated with allied species of viburnum of unknown potency and even with the bark of *Acer spicatum*. In common with many other vegetable drugs whose activity cannot be proved pharmacologically, viburnum has been in disrepute with many physicians.

In the *Journal of Pharmacology and Experimental Therapeutics* for June 1942 (75,2, 174-177), W. E. Evans, Jr., W. G. Harne and J. C. Krantz, Jr., of the Department of Pharmacology of the School of Medicine, University of Maryland, Baltimore, report the isolation of a glycoside from viburnum prunifolium which, in comparatively high dilutions, *in vitro* relaxes the uterus of mature, virgin rats and strips of human uterine muscle.

The principle is described as freely soluble in water and alcohol, extraordinarily bitter to taste, liquefies at 72°, is sparingly soluble in chloroform, and is amorphous, although a small crop of crystals has been obtained with difficulty from a hydroalcoholic solution.

The authors plan to study the effect of the principle on the human uterus *in situ* and also in the treatment of dysmenorrhea.

Perfumers Shelf

TOBACCO FLAVORING

Tobacco flavorings are j e a l o u s l y guarded secrets, for they impart an individuality to the blend of cigarette or smoking tobacco which endears it to the trade. Details of formulas are scarce, and the layman has difficulty in penetrating the veil of mystery which obscures flavoring processes. A few basic facts are available.

To effect a proper balance among these tobacco components, to counteract certain deficiencies in aroma, and to neutralize acidity, it is necessary to add foreign materials. To correct aromatic deficiencies, numerous essential oils, such as anise, cinnamon, cloves, nutmeg, lavender, and attar of roses are employed. For aroma, vanilla and tonka-beans—strong in counarin—take the lead. Lack of resin—the source of natural tobacco aroma—in some domestic leaf types is met by adding small quantities of specially cured Latakia tobacco from Lebanon, and perique from Louisiana. Should shipments of Latakia be shut off completely, at least one company has developed an imitation which creates the same heady, smoky effect in a blend as the original. This product should be mixed with glycerin and sprayed on the leaf. Oleoresins (essential oils plus resins), such as oil of cocoa, vanilla, and tonka, are dissolved in rum, which acts as the carrying agent. Because of the volatile character of rum, very little of its original aroma remains in the finished product.

Resinoids, such as various benzoin compounds, act as fixatives; they furnish a broad, basic odor which will give body t› otherwise elusive essences.

Further complicating the delicate matter of flavors is the effect of *lighting* a cigarette or pipe. Results of processing tobacco cannot always be predicted because burning alters materially the character of the aroma, the burn of a cigarette being more intense than that of a pipe or cigar.

The story behind some of the more common tobacco flavors, such as tonka-beans, licorice, and deer's-tongue, takes one to the jungles of South America, to the Taman Peninsula of the Soviet Union, and to the lowlands of Florida.

Found in scattered clumps, the tonka tree grows to the impressive height of 100 feet or more, in the jungles of northern South America. Natives seek out the tree and collect the plum-sized mahogany-colored fruit as it fails to the ground.

The beans are soaked in barrels of strong rum for several days. Upon removal, they are flecked with tiny white crystals, deposits of about 1.5 to 2 per cent. coumarin—the most important constituent—which is responsible for that penetrating, spicy aroma, similar to vanilla. The beans, resembling large wrinkled raisins, about 1½ inches long, are now ready for shipment. Beans that go into the processing of certain brands of cigarettes and smoking tobacco are ground and then given another soaking in rum, this time for about 3 months. The resulting liquid drained off is rich in coumarin and, when sprayed over tobacco, in accordance with each manufacturer's formula, gives the finished product a distinctive aroma.

A great favorite with tobacco manufacturers is licorice, used largely in cigarettes, smoking, and chewing tobacco. It is extracted from the roots of a perennial herb of the bean family (*Glycyrrhiza glabra*) native to southern Europe, northern Africa, and western Asia.

Some thought has been given to cultivating the licorice plant commercially in the United States, and, while the sandy-loam river valleys in Texas and Florida are believed to be adapted to licorice growing, the project has not gone beyond experimental stages. Florida and the lower Mississippi Valley might be good experimental areas. Early trial plantings in southern California show that the plant flourishes there.

Despite a good market for licorice, domestic production is hampered by the cost and tediousness of harvesting and drying the crop.

Deer's-tongue or *Trilisa odoratissima* (also called dog tongue or vanilla plant) is a native herb of our own Southeastern. States. This plant has been exploited commercially only for a comparatively short period. Because of its coumarin content, it has proved to be an admirable substitute for vanilla and other sweetening or flavoring agents in the tobacco industry, especially smoking tobacco and snuff.

The list of essential oils employed in tobacco manufacture is as dazzling and varied as that of a French perfumer. It seems that, where these oils are concerned, it is every manufacturer for himself—and, to give an elegant finish to his product, he adds a dash of one or more oils, such as anise, bergamot, cascarilla, cardamom, cinnamon, cloves, coriander, gentian root, menthol, nutmeg, orris, rosemary, valerian, and even bois de rose.

The scope of tobacco flavorings is practically unlimited, and the manu-

facturer may give his imagination full swing in the matter of dressing up his product. This admirable flexibility may prove valuable in the future. Although the supply situation does not appear too serious as yet, the emergency may impose drastic changes in formulas. Should this occur, the resourcefulness of tobacco flavoring experts may be relied upon to solve the problems as they arise.

VITAMIN C FROM LEMON JUICE

Lemon juice is decitrated and the vitamin C is precipitated out with a copper-free basic lead compound such as the basic carbonate and acetate. Oily impurities are extracted from an acid solution of the vitamin C precipitate by means of butyl alcohol. Ethanol is added to the extracted solution to precipitate insoluble physiologically inert lead salt, and after separating the salt acetone is added to produce a further substantially inert precipitate, which is filtered off. The filtrate is evaporated to dryness with enough barium carbonate to neutralize the acid therein. The dry product is extracted with a non-reactive solvent (*e. g.*, methanol, ethanol, propanol, ethyl acetate, acetone and combinations of these with petroleum ether and dioxane) and the physiologically active principle is reprecipitated. The dry product is extracted with acetone, the acetone is evaporated, the residue is taken up in normal propanol and the active principle is crystallized and separated after addition of petroleum ether. *Charles G. King and Wm. A. Waugh, U. S. pat. 2,233,417.*

ISOPROPYL ALCOHOL FOR STERILIZATION

Isopropyl alcohol is a somewhat stronger germicide against vegetative forms than is ethyl alcohol. In addition it has advantages of lower surface tension and greater fat solvent action. The maximum bactericidal concentration of isopropyl alcohol is full strength, as compared with a maximum bactericidal concentration of 70 per cent. by weight for ethyl alcohol. The best grades of commercial isopropyl alcohol are said to be 98 to 99 per cent. The small water content of these solutions renders them less corrosive for metal instruments than the 70 per cent. ethyl alcohol solution.

Unfortunately, however, neither ethyl nor isopropyl alcohol can be depended on to kill spores. Brewer has shown that scalpels are frequently contaminated with sporulating pathogenic micro-organisms. That is probably true also of needles, scissors and other instruments which come into contact with skin. Immersion in isopropyl alcohol for several hours, or even several days, is not a trustworthy method of sterilizing such instruments.

Isopropyl alcohol is sold at present in unadulterated form, which is not irritating to the operator's hands or patient's skin. *J. A. M. A. vol. 119, p. 1387.*

DIETHYLSTILBESTROL DIPALMITATE

Diethylstilbestrol, diethylstilbestrol dipropionate and diethylstilbestrol dipalmitate have been assayed for their therapeutic efficiency in the human being, the subjective response of menopausal patients being used as the criterion of efficiency. Diethylstilbestrol dipalmitate is superior to the others in having a considerably prolonged period of effect together with little or no toxicity. Results demonstrate once again the limitations of using laboratory animals for therapeutic standardization and the necessity of testing such compounds directly in the human being. *S. C. Freed, W. M. Eisin, J. P. Greenhill, J. A. M. A. vol. 119, p. 1412.*

ERGOT SUBSTITUTE

In Mexico the prosaic corn plant—products of which range from whisky to paper—harbors a fungus which may become an important substitute for ergot.

This corn fungus, known as "huitlacoche," is extensively employed by Mexican Indians in childbirth and for related medicinal purposes. Experiments are being conducted with a view to determining the full efficacy of this parasite. *For. Comm. Weekly, Aug. 15, p. 22.*

CONTROLLING LACTATION

Barnes tested the effects of the new synthetic estrogen $\gamma\delta$-di-*p*-hydroxyphenyl-$\triangle^{\beta\delta}$-hexadiene, known as "dienestrol," for inhibiting lactation and compared them with that of diethylstilbestrol and the synthetic estrogenic substance hexestrol in 134 patients who lost their fetus because of stillbirth, abortion or neonatal death, and sometimes in unmarried mothers who had to "foster" their children or in a few mothers with extremely sore breasts and severely cracked nipples. No other treatment was given. Ultimate success was achieved in all cases, though in some treatment was repeated. The course of treatment usually lasted five days; 81 received diethylstilbestrol, 37 dienestrol and 16 hexestrol. The results with dienestrol were apparently not as good as those with diethylstilbestrol, but this was partly accounted for by the fact that it was at first given in small doses (smaller than the initial 5 mg. of diethylstilbestrol twice a day diminished by 1 mg. each day). The optimal total dose of dienestrol was 2 to 3 mg. in five days. The small dose tried at first—0.1 mg. twice daily for five days—was inadequate. The most satisfactory results were obtained with an initial dose of 0.5 mg. twice a day diminished by 0.1 mg. each day. The results were better when treatment was begun within one day of delivery than if started later. They were also better in patients in whom pregnancy had advanced beyond thirty-two weeks than in those in the earlier months of pregnancy. After treatment was stopped on the fifth day the breasts of about a fourth of the patients filled up and further treatment was necessary, but ultimate success was achieved in each one. Three patients with engorged breasts were treated successfully while lactation continued normally. No ill effects followed treatment except that 3 patients complained of transient nausea. *Brit. Med. J. 1942, p. 601.*

TALC IN CIVILIAN DEFENSE

Although the Office of Civilian Defense mentions talc for fighting fires caused by incendiary bombs, little stress is laid on its use. It is, however, one substance that is safe for fighting all sorts of bombs and has many special advantages.

First, its covering power, volume for volume, is far better than that of sand. Although it has a tendency to float on air currents, it adheres so firmly to whatever it touches that only a comparatively small volume need be used. Hence, it extinguishes a fire very readily.

Second, it adheres to magnesium particularly well and is very efficient for extinguishing burning magnesium. Obviously it is far safer and more effective than a water spray. It actually extinguishes the bomb instead of merely hastening the burning.

Third, it will extinguish burning oil. Talc will float on kerosene, etc., until it has adsorbed considerable oil. This makes it very superior for oil fires.

Fourth, it will adhere to phosphorous sufficiently to make it safe until it can be properly treated and disposed of.—*E. M. Peavy, Chem. Eng. News.*

CHEMICALS
DRUGS · OILS

Pharmaceutical *Industrial*

Distributors of

CAMPHOR U. S. P. DU PONT

Powdered form at present, can be shipped promptly

OIL CAMPHOR WHITE, SYNTHETIC

SULPHUR PRECIPITATED, U. S. P.

Sylvania Brand American Product

For Pharmaceutical and Industrial Uses

Samples and Prices on Request

TOWER BRAND

Reg. Trade Mark

Cocoa Butter U.S.P. **Magnesium Carbonate U.S.P.**
Beeswax U.S.P. **Rosin Powdered**
Extract of Witch Hazel **Lanolin U.S.P.**

KAMALA **GUMS** **WAXES**

Buying and Selling Agents for Leading Houses in all parts of the world

CHAS. L. HUISKING & CO., INC.

ESTABLISHED 1910

155 VARICK ST., NEW YORK, N. Y.

Chicago Office
561 E. Illinois St.

Cable Address:
HUISKING, NEW YORK

LONDON AGENTS: Wheeler & Huisking, Ltd.
26 Great Tower St., London E. C. 3, England

SANTONINE

AND ALKALOIDS OF AMERICAN MANUFACTURE

SANTONINE COMPANY OF AMERICA, Inc.
155 VARICK STREET
Cable Address: SANTONICUS, NEW YORK

PEDER DEVOLD COD LIVER OIL

Imported U. S. P.

THEY'LL BE ASKING YOU SOON . . .

for COD LIVER OIL. Sun-poor, cold Autumn and Winter days are not far off. The protection of human health, which an adequate intake of Vitamins A and D affords, will be needed. Especially this season should fuel supply run short.

There are few better or more economical sources of these important Vitamins than Pure, Natural, Vitamin-Tested, Palatable COD LIVER OIL U.S.P. The Drug Trade's choice, for decades, is PEDER DEVOLD'S BRAND which squarely stands for

PURITY, PALATABILITY and POTENCY.

May we take care of *your* requirements, too?

PEDER DEVOLD'S OLEOVITAMIN A and D U.S.P.

DEVOLD'S VITAMIN A AND D FEEDING OILS

IMPORT EXPORT

PEDER DEVOLD OIL COMPANY, INC.

155 VARICK STREET, NEW YORK, N. Y.

Cable Address: VITAMINE, NEW YORK All Standard Codes

ISCO *Substitutes*

to replace currently unavailable

PRODUCTS NEEDED BY THE COSMETIC MANUFACTURER

Each is the high ISCO standard. Some are produced in our own laboratories. All have found high favor.

Instead of ITALIAN TALC

ISCO *Trinity Talc*

A product of the best California mines. Compares favorably with the finer grades of the talc formerly imported.

Instead of LANOLIN

ISCO *Absorption Bases*

including Oxycholesterin Bases and Cholesterin Concentrates. White, also Lanolin color. Quality maintained. We have grades to meet your need.

Instead of BEESWAX

ISCO *Cream Base #730*

Makes an excellent cold cream or cleansing cream at favorable cost and without addition of Beeswax.

Instead of IMPORTED OZOKERITE

ISCO *Domestic Ozokerite*

White and Yellow • Various melting points

Write, wire or phone

INNIS, SPEIDEN & COMPANY

Established 1816

117 Liberty Street . . . . . NEW YORK

CHICAGO · CLEVELAND · CINCINNATI
BOSTON · PHILADELPHIA · GLOVERSVILLE, N. Y.

ADVANCING THERAPY

PHARMACY ADVANCES

Medical Aid to war-time America may result from research work reported at the meeting of the American Pharmaceutical Association held in Denver.

A report from Oregon revealed that ergot, the valuable drug used in childbirth and to prevent hemorrhage following delivery, was collected there and found to have two to four times the potency of the official standard.

Discussion among pharmacists indicated that research is going on in several sections of the country on ergot, which is a rye smut. Imports from Spain and Russia are practically non-existent and an acute shortage has been developing. One shipload that did make the hazardous journey was reported to be below the standard for these medicines in America.

U. S. Plant Industry Office, National Research Council, and the Committee on Botany and Pharmacognosy have, therefore, all requested investigation of domestic sources.

In the vitamin field, the application of a color method to find the amount of vitamin B_1 (thiamin) in pharmaceutical preparations was reported by Ernst R. Kirch of Chicago, and Olaf Bergeim. The vitamin is reacted with a dye-like chemical and the color extracted with an alcohol. By determining the intensity of the color produced, the pharmaceutical chemist can calculate the amount of vitamin present.

Astringents, chemical substances such as are used in so-called "skin tighteners," may enhance the effect of germicides and disinfectants, another paper reported.

Much used but long in ill repute as antiseptics, the astringents now take their place as an adjunct to other antiseptics. The double action of the two is often desired by physicians but the boost given to germ-killing power of antiseptics by the astringents had not been fully realized.

Research evidence presented by Joseph B. Sprowls and Charles F. Poe of Boulder, Colo., indicates that such chemicals as tannic acid, widely used for burns, has a beneficial effect on the action of several common antiseptics.

Development of a single-dose emergency hypodermic unit at the request of the War Department was also reported to the pharmacists by J. D. Hulsmann and F. W. Nitardy of Brooklyn. It is a sterile, airtight, leak- and shock-proof, convenient unit, said to be ideal for use on the field of battle.

Possible use of some of the aminophthalic chemicals as local anesthetics was suggested in a paper by L. W. Rowe of Detroit. *Science News Letter, August 29, 1942.*

PREMATURE GRAY HAIR

Premature graying of the hair is an old problem without solution as yet. It is hard to explain the eccentricities of its occurrence. It is a familial peculiarity in many instances and in others is thought to result from nervous disturbances. It has long been suspected that deficient nutrition of nerves is a factor in its causation.

The vitamin studies which produce graying in animals and then cure it by correction of the diet have been made on mice, rats, dogs and silver foxes. By shaking a watery solution of liver extract, yeast or rice bran with fullers' earth the thiamine, riboflavin and pyridoxine are removed, leaving a solution of the "filtrate factor." Animals fed with a diet containing the other vitamins but lacking this factor soon show patches of fur that has become gray and thinned, ulcers sometimes appear on the tail or hind legs, the animal's skin becomes wrinkled as in old age, it becomes feeble, and it often dies within a few months if kept on the deficient diet. On adding the "filtrate factor" to the diet these symptoms clear up in most cases.

It is known that this factor contains pantothenic acid and para-aminobenzoic acid; but the effort to determine which of these is responsible for the prevention of graying has not been successful as yet, for there is disagreement among the research workers engaged in the problem. Ansbacher and his associates find that the lack of para-aminobenzoic acid causes the graying and that adding this vitamin to the diet restores the color of the depigmented patches. (Role of Para-Aminobenzoic Acid in the Vitamin B Complex—Studies with Mice, *Proc. Soc. Exper. Biol. & Med. 48:* 118 (Oct.) 1941). Others (Emerson, G. A.: Failure to Cure or Prevent Graying of Rats with Para-Aminobenzoic Acid, *ibid. 47:* 448 (June) 1941, Unna, Klaus; Richards, Grace V., and Sampson, W. L.: Studies on Nutritional Achromotrichia in Rats, *J. Nutrition 22:*553 (Dec.) 1941) have succeeded in producing the gray spots by depriving the animals of pantothenic acid and have then cured the animals by adding this vitamin to their diet. It has been suggested that there may be other vitamins as yet undiscovered in the "filtrate factor."

Apparently there are only two articles in the medical literature dealing with the effects of vitamin B Complex and para-aminobenzoic acid on human hair. They are both by B. F. Sieve (Clinical Achromotrichia, *Science 94:*257 (Sept.

Exchange
Citric Acid
U.S.P.
CRYSTALS · GRANULAR · POWDERED

MADE FROM AMERICAN LEMONS

Exchange Citric Acid is made by the world's largest lemon products plant in the midst of America's biggest year round supply of lemons.

CALIFORNIA FRUIT GROWERS EXCHANGE
PRODUCTS DEPARTMENT
ONTARIO, CALIFORNIA
189 W. Madison St., Chicago — 99 Hudson St., New York

WAREHOUSE STOCK NORMALLY CARRIED IN NEW YORK CHICAGO, PHILADELPHIA, AND SAN FRANCISCO

Copyright, 1941, California Fruit Growers Exchange, Products Dept.

PURIFIED TITANIUM DIOXIDE

WHITTAKER
ESTABLISHED 1890

For high grade cosmetics, deodorants and allied products. **Ultra White. Extremely Fine. Purity Guaranteed** to contain less than 20 P.P.M. lead and less than 2 P.P.M. arsenic.

Write for samples and prices.

Chicago
HARRY HOLLAND & SONS
Philadelphia
PELTZ & CO.
Toronto
RICHARDSON AGENCIES, LTD.

WHITTAKER, CLARK & DANIELS, INC.
260 WEST BROADWAY • NEW YORK CITY

2520

12) 1941; The Clinical Effects of a New B Complex Factor, Para-Aminobenzoic Acid, on Pigmentation and Fertility, *South. Med. & Surg. 104:*135 (March) 1942). When vitamin B complex was administered to 9 patients who were under treatment for endocrine dysplasias the gray hair of all, he reports, became noticeably darker. He then began the use of para-aminobenzoic acid for the same purpose, giving it to those on treatment with endocrine preparations and also to many who were on no other treatment. In this second paper he reports over 800 cases treated in this way. Within three to eight weeks of treatment with the vitamin the gray hair became dirty yellowish and then "dark dusty gray."

These reports justify skepticism. As far as his articles show, Sieve's only evidence of color changes was his visual impressions. Those who have tried to judge slight color changes in the skin or hair realize how easily one can be deceived.

The question of the possible harmful action of para-aminobenzoic acid in large dosage must be considered. Several investigators have shown that this substance interferes in vitro with the bacteriostatic action of the sulfonamide drugs on pneumococci and staphylococci and that it promotes the growth of Streptococcus p y o g e n e s (Spink, W. W., and Jermsta, Jean: Effect of Sulfonamide Compounds on Growth of Staphylococci in Presence and Absence of para-Aminobenzoic Acid, *Proc. Soc. Exper. Biol. & Med. 47:*395 (June) 1941). Experiments on human beings with large doses of para-aminobenzoic acid should not be made until it is known what such interference with the bacteriostatic action of the sulfonamides signifies in the animal body. *J. A. M. A. vol. 119, p. 1536.*

PREVENTING IVY POISONING

Moss investigated the effect of histaminase in preventing the cutaneous reaction of susceptible individuals to poison ivy. Eight subjects who had had ivy dermatitis the previous summer were observed for ten days in a summer camp at which it was practically impossible to escape exposure. Four of the subjects were given orally 45 units of histaminase daily and the remaining 4 served as controls. During the ten days ivy dermatitis developed in 2 of those not treated, in 1 rather extensively. In none of the 4 receiving histaminase did dermatitis develop. Two subjects who had had dermatitis the previous summer deliberately exposed themselves to the plant after taking 45 units of histaminase daily for ten days; lesions did not develop. A group of 35 campers were observed for twenty-five days; 9 admitted having had dermatitis the previous summer. These 9 campers were given 45 units of histaminase by mouth for the twenty-five days. The remaining 26 subjects were used as controls. One of those receiving histaminase had diarrhea twenty-four hours after the first dose was given and was excluded from the study. Of the 8 subjects receiving histaminase dermatitis, a 2 cm. area on the knee developed in only 1. Ivy dermatitis developed during the twenty-five days in 13 of the 26 controls. Four subjects, all susceptible by history, deliberately exposed themselves by rubbing the plant into the skin after taking 60 units of histaminase daily for ten days, and only 2 had lesions. *N. C. Med. J. vol. 3, p. 243.*

VITAMIN D AND TOOTH DECAY

Additional evidence that forms of vitamin D—viosterol and cod liver oil—vary widely in their ability to prevent tooth decay, is reported by Dr. E. C. McBeath and Dr. W. A. Verlin of New York in the *Journal of the American Dental Association* (Aug. 1).

Nearly twice as many vitamin D units of irradiated ergosterol or viosterol were required as of cod liver oil, to produce the same preventive effect. When the dose of viosterol was quadrupled, there was only a slight improvement in results.

Effectiveness of vitamin D, and especially cod liver oil, in preventing tooth decay was reaffirmed by the fact that a daily dose of 400 units, a little more than a teaspoonful of standard cod liver oil, reduced dental caries by nearly a half.

When this dosage of cod liver oil was doubled, the decay was lowered by about two-thirds as compared with a group of children receiving no vitamin D supplement to their diets.

Some research workers claim that concentrated vitamin D is less effective than when given in a more dilute form. Drs. McBeath and Verlin, therefore, gave all dosages dispersed in a glass of chocolate milk.

Other research also indicates that the two forms of vitamin D, cod liver oil and viosterol, are really chemically different and can have different physiological effects.

"In our own studies," the research workers report, "which now comprise 120 children given supplements of irradiated ergosterol (viosterol), the effect, while always measurable, was uniformly unfavorable when compared with those from cod-liver oil therapy." *Science News Letter, August 29, 1942.*

MANUFACTURING TOTAQUINA

Totaquina is the quinine product produced by the Bureau of Science of the Philippines from cinchona bark grown in the Island of Mindanao. The quills are ground, screened and reground in a ball mill to assure a uniform fine powder. It is mixed with lime and water and charged into percolators. Fresh bark is lixiviated with weak alcohol percolate, while fresh alcohol is passed through spent bark lixiviated the previous day. The strong percolate is charged into a simple batch still to volatilize, the alcohol is recovered and the gummy residue is treated with 5% sulfuric acid to get the alkaloids in solution. Then the remaining gums and resins are filtered on a canvas mat, and the liquid is pumped into a decolorizing kettle where charcoal is added. This mixture is filtered and caustic soda is added to crystallize the alkaloids which are filtered over canvas in the totaquina filter and the filtrate returned to the precipitating tank. Further addition of caustic soda precipitates the amorphous alkaloids which are similarly filtered. The precipitates are dried on plates by a fan circulating warmed air. The dried totaquina is powdered in a pebble mill and fed into a tablet machine. All equipment is stainless steel. *Rafael Simpao. Rev. Filipina Med. Farm., 32 (1941), 80.*

VITAMIN D

Cod liver oil imports to India have almost ceased. The vitamin D content of the body and liver oils of 10 Bengal fish, mainly sawfish and shark, is reported. The oils were assayed by the "line test" technique based on the effect of substances to promote calcification in the bones of young rats on a rachitogenic diet. Most of the oils examined contained about the vitamin D content of "Finest Norwegian" cod liver oil. These oils are about 8 to 10 times as rich in vitamin A as is B. P. cod liver oil. The author suggests the Bengal fish oils be diluted with respect to their vitamin A content and then fortified with calciferol to yield a product comparable in strength to that ordinarily prescribed. *S. Ranganathan. Indian J. Med. Research, 29 (1941), 699-702.*

TROUBLED OVER TAN?

Remember the Uniformity of National Certified Colors!

For patients who like their chocolate coating, "the way it looks" has a lot to do with whose pills or tablets they buy.

Exactitude is the keynote in National's laboratory, where National Certified Colors are produced for your pills, tablets and elixirs—the same laboratory that makes famous National Biological Stains and Indicators. This is your assurance that strict requirements for shade and uniformity will always be met.

National Technical Service is backed by years of unrivaled color experience. Your inquiry is invited.

Pharmaceutical Laboratories

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street • • New York, New York

BOSTON PHILADELPHIA GREENSBORO CHATTANOOGA
PROVIDENCE SAN FRANCISCO ATLANTA PORTLAND, ORE.
CHICAGO CHARLOTTE NEW ORLEANS TORONTO

Use LABELS AND SEALS

FAITHFUL ioy SERVICE

JOHN HORN

837-839 TENTH AVENUE

NEW YORK N.Y.

FOR OVER FIFTY YEARS

for greater sales appeal

METAL · EMBOSSED
ENGRAVED
DIE STAMPING FOR BOXMAKERS

FOUNDED T & B 1856

"Look for the Symbol of Standardization"

GUMS

For over 75 years the recognized source of supply

Arabic

Tragacanth

Karaya

All powdered gums standardized by Laboratory Control

THURSTON & BRAIDICH

286 Spring Street New York

Represented in Chicago by A. C. Drury & Co., Inc.

READERS' QUESTIONS

HAND LOTION: Our hand lotion is very thick, so that it is quite difficult to pour from the bottle we use. I have tried diluting it with considerable water, which does thin the preparation, but the results are unsatisfactory. After a few days the lotion separates into layers. I should very much appreciate your suggestions for improving our formula. New York.

Dilution of your lotion by the addition of water is not a good idea, even if the lotion stayed together, since the product would feel very watery on the skin. You have altogether too much quince seed mucilage present. About one per cent. is enough to give desired stability and the silky effect.

SKIN PROTECTIVE CREAM: I have had many calls recently for a cream to be applied to the hands before undertaking work that involves the use of greases or chemicals that might cause irritation. Have you any suggestions for the formulation of a product of this type? South Bend.

The principle behind creams of the type you have in mind is the formation on the skin of an invisible barrier that prevents penetration of grease or dirt into the skin itself. These materials penetrate the cream film, are stopped from going further, and the film can be washed away, along with the injurious or soiling materials, whenever desired. A good product must leave a greaseless, practically invisible, continuous film on the skin. The basis for creams of this type is a good vanishing cream. The cream must easily and quickly rub out to form an invisible layer without rolling. This is usually not sufficient, since greases will penetrate the film of stearic acid left on the skin. A barrier substance, talc, magnesium stearate, or the like, is included in the cream and is quite impermeable to many substances that might go through the cream. A standard vanishing cream is first made and then thinned with some water. Grind into this about twenty per cent. of the solid barrier material, to obtain a cream with normal consistency.

PANCAKE MAKE-UP: We should appreciate your advice as to the proper procedure in manufacturing a make-up cake of the so-called "Pancake Type." We are specially interested in determining whether oil-soluble or water-soluble colors are used. Santiago.

Insoluble colors must be used in the type of product you have in mind, since fastness to both water and oil is one of the strongest points in favor of this make-up preparation. Manufacture of a good product is by no means simple. The individual tinted pigment particles that make up the cake must be previously treated to make them absolutely waterproof. These waterproofed particles are finally pressed into a cake in the usual way, using a dilute gum solution as a binder.

POISON IVY CREAM: In your issue of June 1942 there is reference to a poison ivy ointment developed by the Public Health Service. We refer to the second formula on page 683. We have tried to make this preparation but find that the product is gritty, probably due to the solid sodium perborate it contains. This was incorporated by massing it with the oils and then adding it to the semihardened base. Can you advise if this is the proper manufacturing procedure? Montreal.

If a very finely powdered sodium perborate were to be used in this preparation, there should be no problem of grittiness. In any event, whenever ointments containing solid materials are made, it is imperative that as a final step the ointment be passed through a good roller mill. This is the one sure way of obtaining an absolutely smooth product. Incidentally, it seems to us that both formulas No. I and No. 2 are typically dermatologist's products in that they are unnecessarily complicated. We see no reason to believe that the ointments as formulated are likely to be any more effective than mixtures consisting of petrolatum or a soft hydrogenated fat containing 10 per cent. of sodium perborate.

BRIDGEPORT

Until the emergency is over our facilities for the production of metal containers will be devoted to products of direct importance to the war effort. In the meantime containers of non-critical materials are being developed.

THE BRIDGEPORT METAL GOODS MFG. CO.

Established 1909

BRIDGEPORT CONNECTICUT

→ ISOPROPYL ALCOHOL

→ ISOPROPYL ETHER

This advertisement appears as a matter of record only.

STANDARD ALCOHOL COMPANY

THE ORIGINAL SYNTHETIC SOLVENT MANUFACTURERS

26 BROADWAY, NEW YORK, N. Y.

AMPHETAMINE REACTIONS: I wish to question you as to the use of amphetamine as an inhalant. I have been told that continued use over a period of time may affect the mind. I suspect that this statement originated with some skeptic and is without foundation. I would appreciate any statement you might care to make on this subject. Washington.

According to "New and Nonofficial Remedies," published by the American-Medical Association, "Its use is contraindicated in those who suffer from cardiovascular disease and in those who show either sensitivity or pressor effect from its use in therapeutic doses . . . Continued overdosage should be guarded against, as this has caused restlessness and sleeplessness; and serious reaction has been reported as a result of overdosage and what appears to be hypersensitivity to benzedrine in inhalator form." The publication has even more to say regarding the use of benzedrine or amphetamine sulfate taken internally, namely, "The very nature of the therapeutic effects, as well as the side actions of this drug, requires that its use be promoted with proper caution as to pressor effect, hyperexcitability, gastrointestinal disturbance, restlessness, sleeplessness and in overdosage, chills, collapse, and syncope."

As against these unpleasant effects from excessive or improper use, is the fact that both benzedrine and its sulfate are included in the publication as acceptable medicaments in their proper place.

WAVE SET PROBLEMS: Although I have followed your recommendations concerning preservatives and use what I am sure is a good preservative in sufficient quantity, I am still beset by troubles in my wave set concentrate and in the solution diluted for use. Several samples of the concentrate have been sent back to me for examination. The powdered gum had set at the bottom of the bottle to a hard mass that could hardly be cut with a knife, and would not be suspended in the liquid by any amount of shaking. Moreover, in some cases when the finished wave set is made by pouring the concentrate into the proper amount of water, the wave set does not keep very well. After a short while, the solution loses all its stringiness and gumminess and becomes thin as water. Since no bad smell develops, I do not believe that bacterial action has taken place. I use a good grade of powdered karaya, neutralized with caustic soda and mixed with alcohol. Any help you can give me in solving my difficulties would be much appreciated. Chicago.

Somewhere along the line you have permitted the powdered gum to absorb too much water. This may have taken place by exposure of the gum to moist atmosphere or even to the use of alcohol containing too much water. Water must be rigidly excluded from wave set concentrates; a small amount of moisture will soften and swell the surface of the individual gum particles. These will then clump together, water will diffuse through the mass, and the end result will be a hard lump that can be dispersed only by the action of hot water. As for the thinning of a finished solution, once bacterial action has been ruled out, the only and quite likely possibility is continued hydrolysis of the gum with complete breakdown of the structure caused by excess alkali. Karaya is acid in reaction and when too acid will not develop its full stringiness. The addition of sodium hydroxide or any other alkali will bring the gum to neutrality and in best form for wave-set use. Neutralization, however, does not mean the use of a set amount of alkali with every different batch of gum. Natural products are as a rule far too lacking in uniformity to permit such procedure. Only enough alkali should be added to each batch of gum to bring about neutrality as shown by a selected indicator, in this case phenolphthalein. Even with reasonably careful neutralization, sodium hydroxide, as a very strong alkali, should be used cautiously to avoid excess. In fact, it probably will be better to neutralize only partially with a strong alkali and then finish the job with a much weaker one such as borax.

SPERMACETI SUBSTITUTE: Due to government restrictions on spermaceti, we are in need of a substitute to take its place in our product which is an ointment containing spermaceti, cetyl alcohol, Duponal ME dry, glycerin, liquid petrolatum light, calamine, zinc oxide, camphor, phenol, and distilled water. We would greatly appreciate any advice you may have on a substitute for spermaceti in this preparation. Philadelphia.

If only a small amount of spermaceti is present in your formula it may safely be omitted entirely, or replaced by an equal amount of cocoa butter. If a substantial proportion of spermaceti is present, however, it may have a stiffening effect on the cream. In this instance, a hardening agent must be substituted for the spermaceti. This hardening agent may be beeswax, ceresin, paraffin, etc., not necessarily in the same proportion as the spermaceti.

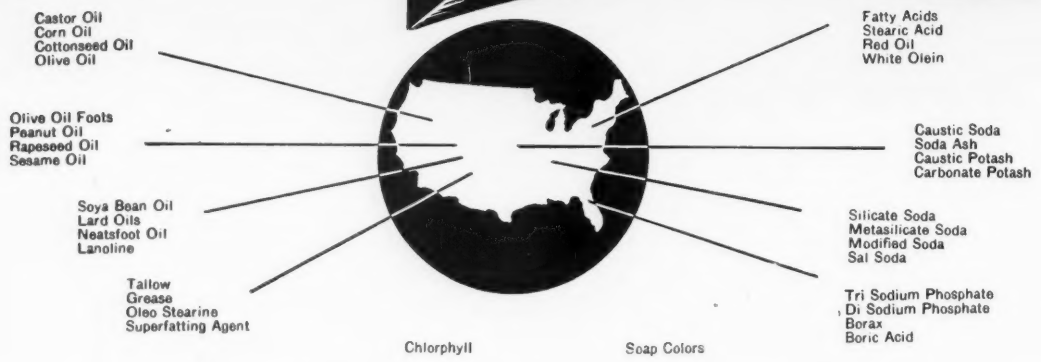
DENTAL PLATE FIXER: We should like to know how to go about formulating a dental plate powder that can be used to keep plates in place. Cincinnati.

We have not examined the adhesive powders you are interested in but believe that they are based on powdered gum karaya. We have had no direct experience in this field since we fortunately still retain most of our teeth. These products seem to consist of a powdered gum such as karaya with from one to two per cent. of methyl parahydroxy benzoate as a preservative and the required amount of flavoring oil. Karaya is a generally acceptable gum but if too much allergic reaction to this material is encountered, it may be necessary to experiment with other powdered gums. Methyl cellulose, properly handled, might well be very useful in this connection.

LIQUID DENTIFRICE: We should like some information regarding the basic formula for a liquid dentifrice. Is the alcohol usually recommended used as an antiseptic and does it have any effect on the foaming and detergent power of the active ingredient? We feel that the alcohol improves our mixture. Of what use is the large amount of glycerin that has been recommended? Charleston.

Alcohol in the concentration recommended for use in liquid dentifrices serves primarily to keep essential oils and the synthetic detergent in solution. It is most active as an antiseptic when it is present in a concentration of about 70 per cent., but is not extremely effective even then. Seventy per cent. alcohol would also not be particularly beneficial to the oral tissues. Essential oils added for flavoring purposes are far superior to alcohol in antiseptic action and the proportions used for flavoring are generally sufficient to supply all desirable antiseptic action. Glycerin, along with gum, serves to thicken the preparation, and also sweetens it.

RAW MATERIALS for the DRUG & COSMETIC INDUSTRY



FATTY ACIDS OF VEGETABLE AND ANIMAL OILS

Various types.

Replacements for coconut and other soap makers' oils.

Write for samples and prices.

A RECENT INNOVATION

In Welch, Holme & Clark service is the mixing of dry compounds for your private formulas. Let us handle this operation for you.

104 Years of Service

WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET ESTABLISHED 1838 NEW YORK CITY

CHEMICAL KESSCO PRODUCTS SPECIALTIES

INSECT REPELLENT #4

Efficient Non-Toxic Repellent Base

FATTY ACID ESTERS

Glyceryl–, Ethylene–, Propylene–, Diethylene Glycol–,
Mono-Stearate, Mono-Laurate, Mono-Myristate, Mono-Oleate, Mono-Palm, Mono-Ricinoleate

Methyl–, Ethyl–, Propyl–, Butyl–,
Stearate Laurate Palm Myristate Oleate

Also esters of other Fatty Acids and Alcohols.

Kesscowax AC (Acid Emulsifier)

Triacetine C.P.

Cycloform (A base for Suntan Preparations)

For Samples, Specifications or Suggested Formulae, WRITE TO

KESSLER CHEMICAL CO., Inc.

DELAWARE AVE. and MIFFLIN ST. ESTABLISHED 1921 PHILADELPHIA, PA.

PURCHASING DEPARTMENT

AUGUST MOVEMENTS

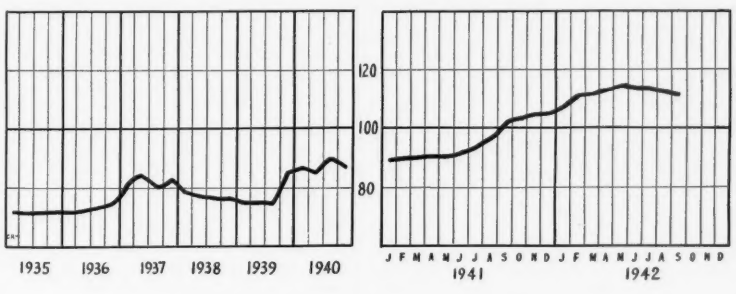
Up

Gum arabic powd. USP 2c	Buchu leaves 3c	Spearmint oil 5c
Amber sorts 1½c	Kamala 2c	Turmerit root Madras 1c

Down

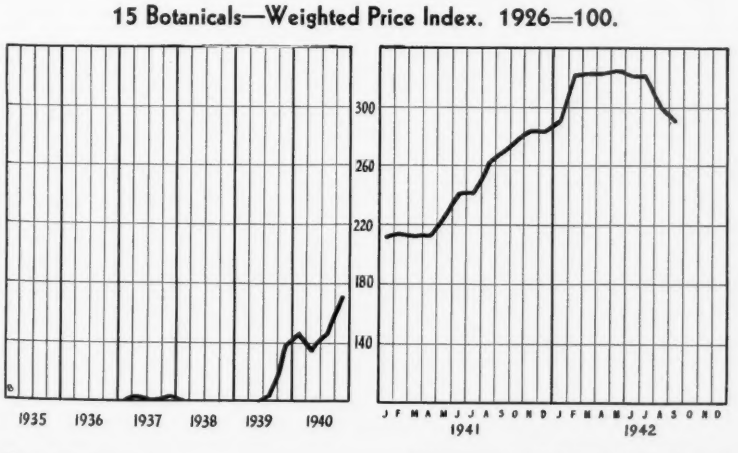
Aconite root 65c	Cedar wood oil 5c	Lemon grass oil 25c
Anise oil 5c	Citronella Ceylon 5c	Saffron American 15c
Arnica flowers $1.15	Coriander oil 50c	Spanish $2
Balsam Peru 25c	Elder flowers 7c	Spruce oil 30c
Belladonna leaves 50c	Erigerion 5c	Stearic acid TP 1½c
Burdock root 1c	Golden seal root 25c	Tragacanth gum No. 1 10c
Cedar leaf oil 25c	Henbane leaves 15c	No 2 15c.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index declined to 111.1 from the previous 112.2. Peru balsam was 25 cents a pound lower at $1.20; stearic acid TP declined to 17 cents a pound and gum tragacanth No. 1 grade declined to $3.90 from the previous $4 level. Menthol was in a position where production from domestic peppermint oil offered the only solution to the supply position.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index declined to 290.0 from the previous 300.0. Arnica flowers dropped rather sharply to $2.85 a pound; belladonna declined to $2.10 a pound. Buchu leaves were 3 cents a pound more at 85 cents. While foreign supplies must remain uncertain, the period during which domestic stocks are built up is at hand.

UNION GENERALE DES COOPERATIVES
AGRICOLES BULGARES
(CONSISTING OF OVER 1200 COOPERATIVES)

OTTO OF ROSE

GUARANTEED PURE
BY THE BANQUE AGRICOLE ET COOPERATIVE
DE BULGARIE

ORIGINAL PACKAGES
ONE KILO
500 GRAMS
250 GRAMS
100 GRAMS

SOLE AMERICAN AGENTS

LAUTIER FILS, INC.
154-156-158 WEST 18th ST., NEW YORK

REPRESENTING

LAUTIER FILS
GRASSE PARIS LONDON BEYROUTH KOBE
MANUFACTURERS OF QUALITY RAW MATERIALS FOR PERFUMERY FOR OVER 100 YEARS

QUALITY RAW MATERIALS

Our complete stocks guarantee that you can obtain the exact grade and quality for your requirements without delay.

BEESWAX, sunbleached and yellow
Refined U.S.P.
TRAGACANTH GUM, all grades
KARAYA GUM, all grades
LANOLIN, anhydrous U.S.P. and B.P.
STEARIC ACID, fancy triple pressed
QUINCE SEED, Persian, recleaned

also

SPERMACETI WAX CERESIN WAX
MENTHOL CAMPHOR

and all other cosmetic raw materials. Samples on request.

Write for latest stock list

WALTER H. JELLY & CO.
INCORPORATED
412 N. Western Avenue Chicago, Illinois

5 ODORS FOR TODAY

THE 5 odors listed below crystallize the results of a careful study made of the types of perfumes that are preferred *today*. These odors mirror the exciting, kaleidoscopic tempo of the times—the all-out spirit of Victory that is running through the warp and woof of everyday life like a vivid red thread. They stir the emotions like a drum-beat. They should—and can—be clarion calls to action . . . . at the toilet goods counter.

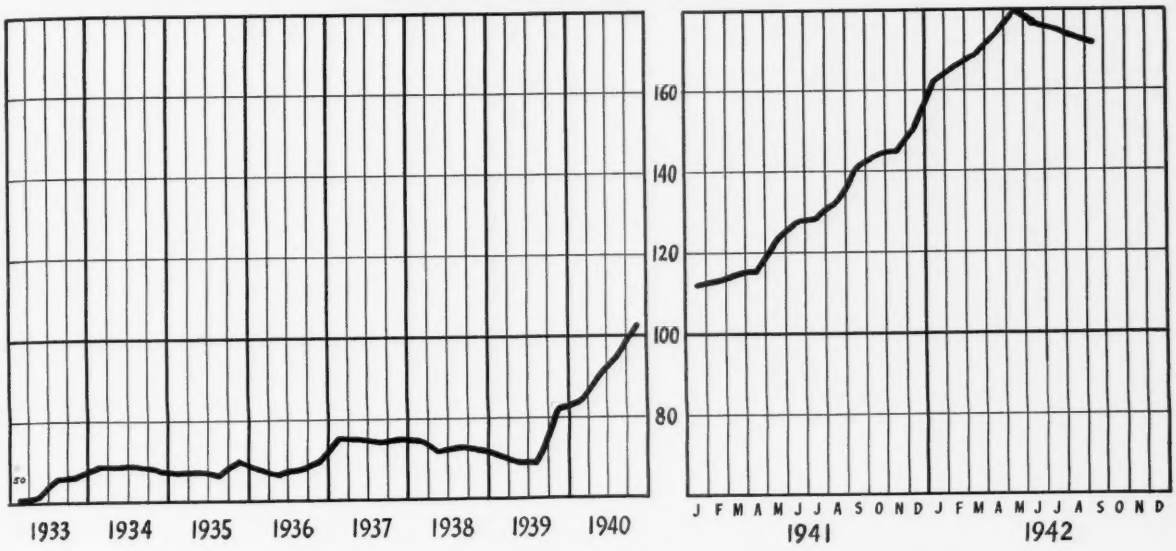
BOUQUET SUZANNE 1830
FANTASIA 1828
FLEURS DE NUIT 1829
BOUQUET PARISIENNE 1827
LA REINE 1831

Samples sent gladly upon request

VAN DYK & CO., INC.
Manufacturers of Perfumery and Cosmetic Raw Material since 1901

OFFICES, WORKS AND LABORATORIES
57 Wilkinson Ave., Jersey City, N. J.
Los Angeles: 1282 Sunset Blvd.

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for August, 1942 declined to 172.1 from the previous 173.4. There were price changes in the botanical, essential oil, and cosmetic raw materials group of commodities although the medicinal chemical group remained without change. Business in the raw material market as a whole continued to be below normal with the decline in actual sales being most sharply reflected in essential oils and cosmetic raw materials.

• Prices quoted in this section were current on the first of this month.

CITRONELLA

Citronella Ceylon has receded further to $1.25 a pound minimum, whereas the price for a good citronella Java is still about $2.50 a pound. It is surprising to see this sharp differential between the two grades as only a few years ago the Ceylon grade was ten to twenty per cent. above the Java variety. Evidently citronella Ceylon is of value in the lower price class of essential oils, whereas the Java material can be used as a raw material for the manufacture of finer rose odors and for the production of menthol, for which there is a steady and increasing demand.

Our imports of citronella oil amounted to almost 3,000,000 pounds in 1940 and were valued at $700,000.

Of the total amount imported 2,370,000 pounds came from the Netherlands Indies; 388,000 from Ceylon; and most of the remainder, about 145,000 pounds from Guatemala. In Guatemala the industry is relatively new but appears to be making good progress.

MINT OILS

Under date of August 14th the Office of Price Administration announced that sales and deliveries of volatile oils, the most important of which are peppermint and spearmint, by the growers of the plants from which these oils are distilled, are exempted from the provisions of the General Maximum Price Regulation.

These volatile oils are distilled on the farm by the growers of the plants. As most growers did not make sales during March, 1942, the base pricing period of the General Regulation, it has been deemed advisable to exempt their sales of these oils from the provisions of the regulation.

The exemption from the General Maximum Price Regulation, which applies to all growers in the United States, is contained in Amendment No. 21 to Supplementary Regulation No. 1 and is effective as of May 11, 1942.

The effect of the ceiling cancellations may be to advance prices strongly for peppermint oil and possibly menthol, according to opinion expressed in the essential oil trade here. The war has cut off menthol importations from Japan and the pharmaceutical industries have been dependent upon synthetic menthol derived from American peppermint. Menthol may be classed as a "volatile" oil under the order.

Under date of August 21, the Office of Price Administration authorized two Midwestern dealers in peppermint and spearmint oils to adjust their maximum prices under the General Maximum Price Regulation in line with those of their competitors to enable them to carry out their contracts with the farmers.

At the same time, the Office of Price Administration announced that the prices of peppermint and spearmint are being closely scrutinized and, if desirable, a separate maximum price regulation covering these products may be issued in the next few months. Sales of these oils, other than sales by growers of the plants from which the oils were distilled, are covered by the General Maximum Price Regulation.

The action was effected through the issuance of two orders under 1499.18 (b) of the General Maximum Price Regulation. Order No. 24 permits the A. M. Todd Company of Kalamazoo, Michigan, to sell natural oil of spearmint at $3.50 a pound, U. S. P., special redistilled oil of peppermint at $5.75 a

OUR LABORATORIES AT YOUR SERVICE

We can manufacture any kind of Cosmetic Creams, Powders, Lotions, Lipsticks, Cream Rouges, and Colored Foundation Make-up Creams, under "your private label." Let us know your wishes by sending us your sample and quantity of preparations you desire.

Bergholt Laboratories

7304 Lyndale Ave. S. Minneapolis, Minn.

SHEET METAL GOODS

SPRINKLER TOPS

CORK TOPS DOSE CAPS

CONSOLIDATED

FRUIT JAR COMPANY

NEW BRUNSWICK, N. J.

falba

Reg. U. S. and Foreign Countries

The Heart of LANOLIN

THE ORIGINAL ABSORPTION BASE

Write for booklet

Pfaltz & Bauer, Inc.

EMPIRE STATE BUILDING, NEW YORK

POLAK & SCHWARZ, INC.

667 Washington St. New York, N. Y.

Perfume Bases

Compositions and Specialties

Essential Oils Flower Oils

Terpeneless Oils Aromatic Chemicals

Ethers and Esters

Flavors and Extracts

BENZOCAINE U.S.P.

OXYQUINOLIN BENZOATE

OXYQUINOLIN SULPHATE

PROCAINE HCl U.S.P.

RESORCINOL MONOACETATE

TERPIN HYDRATE U.S.P.

SEYDEL

Descriptive booklet on request

SEYDEL CHEMICAL CO.

JERSEY CITY, N. J.

BENZOCAINE

U. S. P.

PROPYL AMINO BENZOATE

ISOBUTYL AMINO BENZOATE

BENZYL BENZOATE

R. W. GREEFF & CO.

30 ROCKEFELLER PLAZA, NEW YORK CITY

ALL GRADES OF

REFINED GLYCERINE

U. S. P. B. P.

YELLOW DISTILLED

HIGH GRAVITY

DYNAMITE

REFINERIES LOCATED AT

★ Brooklyn, N. Y.

★ Jeffersonville, Ind.

★ Jersey City, N. J.

★ Berkeley, Calif.

★ Kansas City, Kans.

COLGATE-PALMOLIVE-PEET CO.

GLYCERINE DEPT. • 105 HUDSON STREET

JERSEY CITY, NEW JERSEY

CERTIFIED

COSMETIC COLORS

Also

COSMETIC

Inorganic Pigments

SUBMIT YOUR INQUIRIES

INTERSTATE COLOR CO., INC.

7 Beekman Street New York City

pound, and the U. S. P. redistilled oil of peppermint at $5.85 a pound. Prior to the adjustment, the company was required under the General Maximum Price Regulation to sell these grades at $2.50, $4.00 and $3.00, although its cost of acquisition for the natural oils was $3.00 for spearmint and $5.00 for peppermint.

Order No. 25 authorized William Leman, Inc., of Bremen, Indiana, to sell natural oil of peppermint at $5.50 per pound and natural oil of spearmint at $3.50 a pound. If an adjustment had not been granted to this company, it would have been forced to sell these commodities at prices below the prices which it is now paying to farmers who produce the oils. The highest prices at which this company sold these particular grades of these oils in March, 1942, were $4.80 for peppermint oil and $2.90 for spearmint oil.

LEMON GRASS OIL

The only commercial source of lemon grass oil in the United States is now in full production at Clewiston, Florida, Jay W. Moran, vice-president of the U. S. Sugar Corp. reports.

With East Indian supplies cut off by the war, some 1,000 acres in the Everglades will provide about 100,000 pounds of the oil for American industry. Samples of the oil show it to be between 75 and 80 per cent. pure citral, Mr. Moran said.

Harvesting is now operating on a continuous cycle of ten weeks. By the time the last acre has been cut, the first is again ready for harvesting, with the climate permitting four cuttings a year.

The sugar company began experiments back in 1935, bringing the plants to a full production commercial basis at the moment when the nation is entirely dependent upon its own resources for the oil. Only other source at present is plantings in Guatemala, and these are subject to ship deliveries.

Lemon grass, once the oil has been extracted, also has been proven an excellent cattle feed when mixed with black strap molasses and is being used in Florida for this purpose. War, however, has prevented wide use in this field, since the government has restricted the use of molasses in order to make large supplies available for smokeless powder, Mr. Moran said. He predicted that at the conclusion of the war, Florida cattlemen will "finish" their own cattle, using the grass and molasses feed.

In recent years Guatemala has become increasingly important as a source for lemon grass oil. In 1940, the last full year for which data is available for publication, our imports from that country amounted to 116,000 pounds. Altogether around 380,000 pounds were imported during that year, the remainder coming mainly from British India.

GUM ARABIC

The Anglo-Egyptian Sudan, imperiled by the present turn of the war in the Mediterranean area, is an important source of gum arabic, competing with cotton as the Sudan's principal export.

War conditions leading to a loss of foreign markets has decreased total exports reported for 1941 to 16,000 tons for all three varieties, as compared with 22,000 tons total in the preceding year. Annual exports normally are reported at 20,000 to 25,000 metric tons, the bulk being made up of hashab, collected by tapping gum trees over vast tracts of wild country.

The United States is the principal consuming market for gum arabic. While imports during 1942 are not available for publication, they are generally conceded to have been heavy. However, future uncertainty regarding the shipment market has strengthened the spot position to the extent that it can be classified as strong.

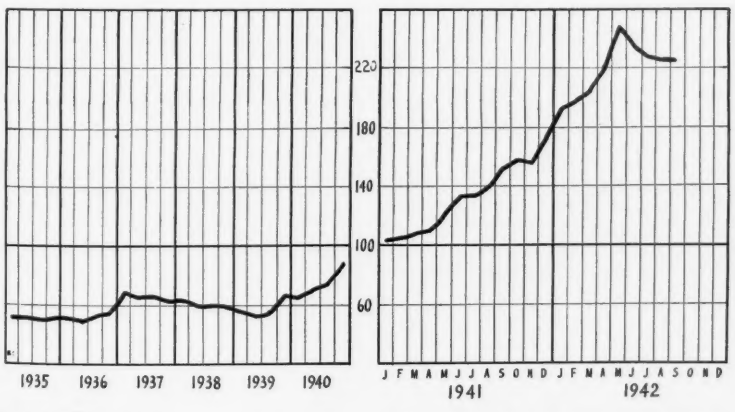
ALCOHOL

While the industrial alcohol situation essentially is unchanged, it is not believed that further tightening of restrictions will be necessary in the near future to provide this essential solvent for war purposes. The revision just made in M-30 covering ethyl alcohol will permit the food industry to get larger quantities for fermentation into vinegar, while the shoe polish industry has been restricted in the amount it can use.

Isopropyl and butyl alcohol and their derivatives have been removed from M-30 because these chemicals are covered in other orders. The use of alcohol as antifreeze has been removed for the same reason. The net effect of these changes is to leave alcohol regulations and restrictions about as they were, and the 70 per cent. restriction on its use for toilet articles and similar manufactures has not been changed.

One of the leading alcohol distillers is increasing its intake of so-called high wines, or low-proof alcohol for redistillation into 190 proof for war purposes. The high wines are being shipped from liquor plants. The same factor, as far as can be learned, has not made arrangements for increasing grain alcohol production aside from quantities produced for the Government.

15 Essential Oils—Weighted Price Index. 1926=100.



The essential oil index declined fractionally to 225.1 from the previous 225.8. This was occasioned by a reduction of 5 cents a pound in the spot market price of anise oil and a corresponding reduction of 5 cents in the price of citronella oil. Most interest centered in the OPA ruling which most likely will be reflected in higher prices for the mint oils.

"Yet no other cup I know
Where such radiant waters glow"
—*A. M. F. Robinson*

THE HORM AIM IN FILTERDOM—

Horm engineers keep an ideal before them in helping manufacturers attain sparkling purity of product through perfect filtration.

Send for Horm filter catalog and FREE samples of asbestos filter sheets.

F. R. HORMANN & CO., INC. Equipment Engineers
127 Boerum Place Brooklyn, N. Y.
FILTERS TANKS MIXERS FILLERS

BC VOLCLAY
BENTONITE

The only micron-sized, grit-free bentonite commercially available.
Especially prepared for the Drug and Cosmetic industry.
Send for free sample of BC VOLCLAY.

AMERICAN COLLOID COMPANY
363 West Superior Street • Chicago, Illinois

MOULDS
for
LIPSTICKS
MASCARO
SUPPOSITORIES
STYPTIC PENCILS
and **DIES** *for* ROUGE
COMPACT POWDER
Write for Catalog
A. CAVALLA, INC. 163 W. 18TH ST. NEW YORK

LET US SOLVE YOUR COLOR PROBLEMS

on the new LEG MAKE-UP. We can help you in shading and blending the certified and purified colors for your Lotions and Liquid Powders. Send for samples and prices.

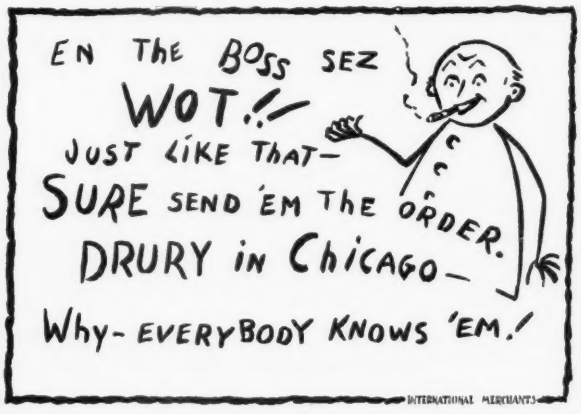
Saponine—Imported (a perfect foam producer)
Carmine #40 powdered also
CERTIFIED PURE FOOD COLORS (FD&C COLORS)

Eastern Representative of Wm. J. Stange Co., Chicago, Ill.
LEEBEN CHEMICAL CO., Inc.
Successors to H. LIEBER & CO., Inc.
389 Washington St., New York, Tel.: WAlker 5-0210, 0211

BUY WITH CONFIDENCE—GET WITHOUT DELAY

52—Monel and Stainless Steel Kettles, capacity 25 and 45 gals.
2—World Rotary Automatic Labeling Machines.
2—Ermold 6-wide Labelers, m.d.
1—Burt straight line duplex Automatic Labeler.
2—Karl Kiefer Visco Filling Machines.
3—World, 1-Ermold semi-automatic Labeling Machines.
1—Pneumatic Scale Powder Filler and Capper, Unit complete.
2—K.K. 72-spout Bottle Washers, m.d.
10—300 gal. Copper closed tin lined Tanks.
4—300 gal. Pfaudler jacketed Kettles, side, m.d. agitators.
5—Dry Powder Mixers, from 50 to 2000 lbs.
25—Aluminum, Copper, Glass Lined, jacketed and agitated Kettles.
Copper and Galvanized Coating Pans; Colloid Mills; Viscolizers.

FOR 33 YEARS A SYMBOL OF CONFIDENCE
We buy and sell from a Single Item to a Complete Plant
CONSOLIDATED PRODUCTS CO., INC.
20-21 Park Row, New York, N. Y.. Shops: 335 Doremus Ave., Newark, N. J.



Founded 1854

FEZANDIE & SPERRLE, Inc.
205 Fulton Street, New York City
HIGHEST STANDARD

Colors and Dyes for Cosmetics, such as

LIPSTICKS	PERFUMES
ROUGES	LOTIONS
FACE POWDERS	SHAMPOOS
MASCARA	CREAMS
SOAPS	Etc.

◆

Your inquiries are invited

COMPAGNIE DUVAL — DUVAL — TRADE MARK

OIL BERGAMOT Artificial Extra

A particularly outstanding fine oil. Definitely much nearer to the Natural Oil Bergamot than the average run of Artificial Bergamot Oils being currently offered. Sample on request.

Representatives: Clifford L. Iorns Co., 619 Clark St., St. Louis, Mo.
Cutler Chemical Co.
Merion Gardens, City Line and Wynnewood Road, Merion, Pa.

COMPAGNIE DUVAL
121-123 East 24th St. New York

TANNIC ACID

New allocations announced for tannic acid U. S. P., along with requirements for its production from nutgalls limits use of that material to the treatment of burns, prescription compounding, as analytical reagent, and as antidote in poisoning. Uses that will be affected by the order include that of dyeing mordant, manufacture of ink, sizing, paper and photo materials. It is also employed in tanning, imitation horn and shell manufacture, for printing fabrics, beer and wine clarification.

GLYCERINE

Stocks of glycerine continue to increase, according to leading producers, and there are rumors about the trade to the effect that the Government is considering some modification of conservation order M-58, whereby consumers may be allowed to carry a sixty-day instead of a thirty-day supply of goods. Every effort has been made to encourage housewives to conserve greases and fats not because of the tight position of glycerine, it is explained, but because it is believed that United Nations will probably be in urgent need of edible fats over the coming winter.

There is nothing spectacular in the glycerine situation. Regular consumers are able to secure as much material as they need and quotations for the most part remain steady and unchanged.

CAFFEINE

As a result of chemical research establishing that Argentine yerba mate is a valuable source of caffeine and other important medical ingredients, an order has been placed by an American firm for more than 11,000,000 pounds of Argentine mate, says a Buenos Aires advice to the Argentine Information Bureau. Experiments are said to have shown that the mate is not only rich in caffeine, but also in other substances of vitamin content, and in chlorophyll which is in increasing demand for medical purposes.

These developments are viewed in Buenos Aires as of considerable potential importance as affording a likely outlet for substantial amounts of mate.

MEXICAN BERGAMOT

United States buyers of perfume oils probably will welcome the news that Mexico is producing a new type of oil from the "lima chicona," a type of lime. This experiment may disclose a substitute for Italian bergamot which is now scarce.

During the latter part of 1941 and the early months of 1942 a lime oil factory in Colima processed about 1,500 pounds of what is known as Mexican bergamot cold pressed oil from the lima chicona, grown principally in the States of Jalisco and Michoacan. A ton of limas chiconas yields about 5 pounds of oil. Only small plantings of the tree have been made, however, and no immediate increase is anticipated.

DIGITALIS

A species of digitalis (Digitalis purpurea), which grows wild in Chile, is believed to compare favorably with that formerly imported from European sources. In fact, its strength has never been less than 10 units per grain, according to the Chilean Instituto de Fisiologia, which controls the drug.

About a year ago digitalis, among other medicinal herbs and plants, was cultivated experimentally on farms, under the supervision of the Caja de Colonizacion (Agricultural Colonization Bank). There appears, however, to be little need for cultivation of the herb since the wild plant has met all tests satisfactorily and grows in sufficient quantity to meet requirements for an indefinite period.

A drying plant has been installed near Osnoro, under the supervision of the Instituto de Fisiologia, but is now operated by the Instituto Bacteriologico. This center now dries about 10 kilograms of leaves a day, although not operating on a daily schedule, and could produce as much as 100 kilograms a day, provided sufficient stocks were regularly available, a local authority reported.

BEESWAX

Active demand for Egyptian beeswax led exports in 1941 to total of 4,393,500 pounds, compared to 1940 shipments of 1,749,320 pounds, an increase of 150 per cent. At the close of 1941 and during early 1942 pure beeswax was quoted at $790 per ton f. o. b. Egyptian ports.

LIMES

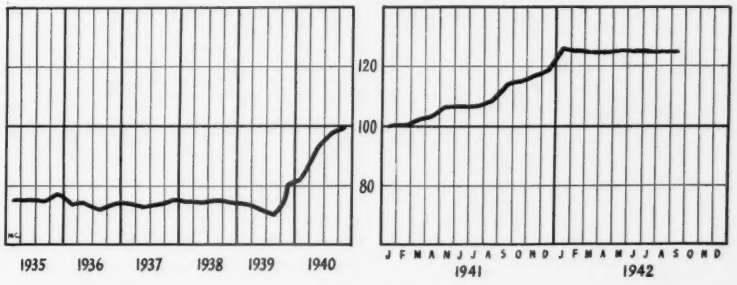
Chief lime producing center of Mexico is the small state of Colima, about two-thirds of the way down Mexico's west coast. Its area of 12,009 square miles and population of 61,923 accounts for 20 per cent. of Mexico's lime producing trees. Dating from 1900, lime cultivation in Colima has attained an average of 25,000 tree plantings annually since 1936, and in 1941 about 40,000. It is estimated the state now has 200,000 to 250,000 trees.

NIACINAMIDE

Prices were reduced during the current trading period with the following schedule now prevailing: Niacinamide (Nicotinamide U. S. P.) 100 lb. drum $9 per pound; 5 lb. drum $9.10 per pound. These quotations are for spot delivery only, no contracts.

The medicinal chemicals index remained without change at 124.4. This is the second consecutive month during which there were no price changes in the special group of materials making up the index. The stability which now seems characteristic of the medicinal chemicals market must be welcome to manufacturing consumers who, in the past, have found it difficult to estimate the cost of their finished goods.

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



Professional Service

THE
COLUMBUS LABORATORIES
Analytical and Consulting Chemists
Bacteriologists
We have been solving problems pertaining to foods, drugs and cosmetics since 1893.
33 N. STATE ST. CHICAGO, ILL.

Philip B. Hawk, Ph.D. *President* Bernard L. Oser, Ph.D. *Director*
FOOD RESEARCH LABORATORIES, Inc.
RESEARCH — ANALYSES CONSULTATION
Specialists in Vitamins
WRITE FOR "SCIENCE AT YOUR SERVICE"
48-14 Thirty-third St. Long Island City New York
Members Assn. Consulting Chem. and Chem. Eng.

LaWALL & HARRISSON
Charles H. LaWall, 1871-1937 Jos. W. E. Harrisson
Analytical and Consulting Chemists
Pharmaceutical and Chemical Research
Process and Formula Development
Food, Drug and Water Analyses
Legal Testimony
214 South 12th Street Philadelphia, Pa.

H. A. SEIL, Ph.D. E. B. PUTT, Ph.C., B. Sc.
SEIL, PUTT & RUSBY, Inc.
Analytical and Consulting Chemists
Formerly Experts for U. S. Dept. of Agriculture
Analyses Made Formulas Developed
Research Investigations Conducted
Specialists in the Analysis of
Beverages Essential Oils
Flavoring Extracts Toilet Preparations
Foods Spices Drugs
Proprietary Medicines Special Formulas
Pyrethrum, Rotenone and other Organic Insecticides
Lab's: 16 East 34th St. New York, N. Y.
Telephone MUrray Hill 3-6368

PATENT YOUR IDEAS
send a Sketch or Model of your invention for
CONFIDENTIAL ADVICE
FREE COMBUSTATION LITERATURE
Z. H. Polachek
1234 BROADWAY NEW YORK
PATENT ATTORNEY ENGINEER
IDEAS
U. S. Pat. Off. records searched for ANY Invention or Trade Mark

Classified

Machinery for Sale

Complete line of rebuilt, guaranteed machinery. See detailed announcement on Page 348 of Consolidated Products Co., 20-21 Park Row, New York City.

CONVEYORS, DRYERS, FILLERS: Liquid, powder, tube; Filters, Kettles, Labelers, Mills, Mixers, Coating Pans, Percolators, Sifters, Tablet Machines, Tanks, etc. Send us your inquiries and a list of your idle equipment. Loeb Equipment Supply Co., 912 North Marshfield Ave., Chicago, Ill.

FOR SALE: Cherry-Burrell type 100 Viscolizer; Raymond 3 Roll High Side Mill, complete; 3′ x 15′ & 4′ x 30′ Rot. Vac. Dryers, Day No. 30 Imperial Mixer, Jack.; Powder Mixers & Sifters 100 lbs. to 3000 lbs.; Paste Powder, & Liquid Filling Machines; Sifters & Screens; Pebble & Jar Mills; Grinders, Crushers & Pulverizers; Mixers, Paste Powder & Liquid; Stills, Kettles & Tanks; Filters & Filter Presses; Dryers, Centrifuges, Pumps, & Bottle Washers, etc. Send for complete listing. We buy your surplus equipment for cash. Stein Equipment Corp., 426 Broome St., New York City.

FOR SALE: 20—Glass Lined Tanks, 25 to 350 gals.; 2—Colton Toggel Presses; Stokes Suppository Machine; 6—Colton Tube and Jar Fillers, hand and power driven; 2—Stokes and Colton Closers and Crimpers; 3—Stokes, Stokes and Smith Powder Filling Machines; 10—Day, Robinson Powder Mixers and Sifters, 50 to 2000 lbs.; 2—Rotex Sifters, 20″ x 48″ screens; Copper, Steel, Aluminum Jacketed Kettles, 10 to 1000 gals.; Pebble and Jar Mills, from Lab. to 200 gal.; Revolving Pans; Mikro Pulverizers; Bottle and Jar Fillers; Labelers; etc. Send for Bulletins. BRILL EQUIPMENT CORPORATION, 183 Varick Street, New York City.

New York's largest stock of rebuilt and guaranteed Pharmaceutical, Cosmetic and Chemical Equipment. We have what you need. FIRST MACHINERY CORPORATION 819-837 E. 9th St., New York.

MACHINERY FOR SALE: 43-Glass-lined sectional Tanks; 750-12,000 gal. capacities; 3-Copper vacuum Pans; 1-2 Spout stainless steel piston Filler; 3-Day Pony Mixers; 1-Day Hunter Sifter and Mixer; 8-New Pony and Alsop table Gummers; Alsop disc and cloth Filters. Write for circular. Will purchase idle equipment at advantageous prices. PERRY EQUIPMENT & SUPPLY CO., 1515 W. THOMPSON ST., PHILA., PA.

CHOICE EQUIPMENT: Stokes & Smith Model G2012 Powder Filler with conveyor; F. J. Stokes No. 15 Powder Filler; Stokes 79D Automatic Tube Filler & Closer; Stokes 2C Piston tvpe Tube & Jar Filer; Cotton No. 2 Tube Filler & Closer; Freas Electric Oven, 18″ x 18″ x 18″, 5 shelves; Day powder Mixers 100 to 1200 lbs.; Stokes No. 20 Mass Mixer; Stokes No. 21 Granulating Mixer; Kiefer 12 stem Rotary Vacuum Filler; Alsop 6 stem straight lined Vacuum Filler; 100 & 1000 gallon glass lined jacketed, agitated, kettles. What have you for sale? MACHINERY & EQUIPMENT CORPORATION 59 E. 4th St., New York.

Machinery Wanted

WANTED AT ONCE: Pneumatic Scale Packaging Machine, Dry Powder Mixers, Tablet Machine, Pony Mixer and Filter, Pebble or Ball Mill, Screen, Kettle and Vacuum Pan. We want good equipment. No dealers need answer. Box 214, DRUG AND COSMETIC INDUSTRY.

HIGHEST PRICES PAID FOR GOOD EQUIPMENT. FIRST MACHINERY CORPORATION 819-837 East 9th St., New York.

WANTED: One Pneumatic Scale Automatic Labeler and one Pneumatic Scale Single-head Capper. Box No. 396, DRUG & COSMETIC INDUSTRY.

Rates—All classifications $1.00 an issue for 20 words or less; additional words 5c each.
Payment must accompany order. Add 10 cents if replies are to come to a box number and be forwarded.

Classified

Help Wanted

CHEMIST: Experienced in the analysis and formulation of drugs and cosmetics. State age, nationality, experience and salary desired. Box No. 397, DRUG & COSMETIC INDUSTRY.

Situations Wanted

PRODUCTION MAN, chemist and perfumer, experience in cosmetics and soap, twenty years in trade, American, P. H. G. Box 388, DRUG & COSMETIC INDUSTRY.

CHEMIST PHARM. D., ETHICAL PHARMACEUTICALS, Proprietary Drugs and Allied Lines. Thoroughly Conversant with every phase of Research and Control. Ability to assume duties of complete Research Problems; of longer standing program or for immediate solution, as created by the present situation. Position of Senior Research or Head of Department preferred. Box 42, DRUG & COSMETIC INDUSTRY.

Consulting perfume-chemist and formulator, duplication of foreign and domestic perfumes and odors for cosmetics, all formulas without use of specialties. Box No. 398, DRUG & COSMETIC INDUSTRY.

Bacteriologist, biologist, doctors degree, experience in direction and research on biologicals, chemotherapeutic agents and pharmaceuticals, desires position of responsibility in research and development with pharmaceutical company. Box 399, DRUG & COSMETIC INDUSTRY.

Business Opportunities

AMPULS, SPECIAL AND STANDARD: Long experience and modern facilities for large production with substantial saving. Other formulas developed and manufactured. Send for information. TORIGIAN LABORATORIES, INC., Queens Village, N. Y.

BEAUTY SHOPS, MANUFACTURING COSMETIC DEALERS, ATTENTION: Distinctive FACIAL CLAY PACKS are prepared from NATOBARRO POWDER. There PLEASING, SAFE and INVIGORATING. Sample order 5 lbs. $1.50 postpaid. Prices quoted, any amount. SUTTON-HUNGER, INC., 9821 Burgen Ave., Los Angeles, Calif.

ATTENTION: Cosmetic manufacturers whose business will be affected by WPB Order No. L-171: If you are interested in selling or merging for the duration, I can supply what is necessary. Write Box 400 DRUG & COSMETIC INDUSTRY.

IMPORTER wishes to contact American Manufacturers who have Agencies to offer of goods for sale in Britain after the war. Plastics are of special interest. Machin & Rowlands, Ltd., 34 Castle St., Shrewsbury, England.

WANT TO BUY close outs in perfumer bottles and jars. Send samples and prices. Dinty Moore Glass & Bottle Museum, 158 W. 11th St., New York.